



PHYSICS

BOOKS - CBSE MODEL PAPER

CASE STUDY QUESTIONS CLASS 10TH EXAM 2020-21

Mcqs

1. Mahesh works as a manager in a hotel. He has to arrange seats in hall for a function. A hall has a certain number of chairs. Guests want to sit in different groups like in pairs, triplets, quadruplets, fives and sixes etc. When Mahesh arranges chairs in such pattern like in 2's, 3's, 4's 5's and 6's then 1, 2, 3, 4 and 5 chairs are left respectively. But when he arranges in 11's, no chair will be left.



In the hall, how many chairs are available?

A. 407

B. 143

C. 539

D. 209

Answer: C



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2. Mahesh works as a manager in a hotel. He has to arrange seats in hall for a function. A hall has a certain number of chairs. Guests want to sit in different groups like in pairs, triplets, quadruplets, fives and sixes etc. When Mahesh arranges chairs in such pattern like in 2's, 3's, 4's 5's and 6's then 1, 2, 3, 4 and 5 chairs are left respectively. But when he arranges in 11's, no chair will be left.



If one chair is removed, which arrangements are possible now?

A. 2

B. 3

C. 4

D. 5

Answer: A



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3. Mahesh works as a manager in a hotel. He has to arrange seats in hall for a function. A hall has a certain number of chairs. Guests want to sit in different groups like in pairs, triplets, quadruplets, fives and sixes etc. When Mahesh arranges chairs in such pattern like in 2's, 3's, 4's 5's and 6's then 1, 2, 3, 4 and 5 chairs are left respectively. But when he arranges in 11's, no chair will be left.



If one chair is added to the total number of chairs, how many chairs will be left when arranged in 11's.

- A. 1
- B. 2
- C. 3
- D. 4

Answer: A

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4. Mahesh works as a manager in a hotel. He has to arrange seats in hall for a function. A hall has a certain number of chairs. Guests want to sit in different groups like in pairs, triplets, quadruplets, fives and sixes etc. When Mahesh arranges chairs in such pattern like in 2's, 3's, 4's 5's and 6's then 1, 2, 3, 4 and 5 chairs are left respectively. But when he arranges in 11's, no chair will be left.



How many chairs will be left in original arrangement if same number of chairs will be arranged in 7's?

A. 0

B. 1

C. 2

D. 3

Answer: A



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5. Mahesh works as a manager in a hotel. He has to arrange seats in hall for a function. A hall has a certain number of chairs. Guests want to sit in different groups like in pairs, triplets, quadruplets, fives and sixes etc. When Mahesh arranges chairs in such pattern like in 2's, 3's, 4's 5's and 6's then 1, 2, 3, 4 and 5 chairs are left respectively. But when he arranges in 11's, no chair will be left.



How many chairs will be left in original arrangement if same number of chairs will be arranged in 9's?

- A. 8
- B. 1
- C. 6
- D. 3

Answer: A

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6. Indian Army is the third biggest military contingent in the World next to USA and China.

However, there are many firsts that make Indian army stand out in the world, making us all Indians very proud. Knowing them, will help you celebrate Republic day with greater vigour and gratitude.



On 71th republic day Parade in Delhi Captian RS Meel is planing for parade of following two group:

(a) First group of Army contingent of 624 members behind an army band of 32 members.

(b) Second group of CRPF troops with 468 soldiers behind the 228 members of bikers.

These two groups are to march in the same number of columns. This

sequence of soldiers is followed by different states Jhanki which are showing the culture of the respective states.

What is the maximum number of columns in which the army troop can march?

- A. 8
- B. 16
- C. 4
- D. 32

Answer: B



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What is the maximum number of columns in which the CRPF troop can march?

B. 8

C. 12

D. 16

Answer: C



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These two groups are to march in the same number of columns. This sequence of soldiers is followed by different states Jhanki which are showing the culture of the respective states.

What is the maximum number of columns in which total army troop and CRPF troop together can march past?

B. 4

C. 6

D. 8

Answer: B



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These two groups are to march in the same number of columns. This sequence of soldiers is followed by different states Jhanki which are showing the culture of the respective states.

What should be subtracted with the numbers of CRPF soldiers and the number of bikers so that their maximum number of column is equal to the maximum number of column of army troop?

A. 4 Soldiers and 4 Bikers

B. 4 Soldiers and 2 Bikers

C. 2 Soldiers and 4 Bikers

D. 2 Soldiers and 2 Bikers

Answer: A



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10. Indian Army is the third biggest military contingent in the World next to USA and China.

However, there are many firsts that make Indian army stand out in the world, making us all Indians very proud. Knowing them, will help you celebrate Republic day with greater vigour and gratitude.



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These two groups are to march in the same number of columns. This sequence of soldiers is followed by different states Jhanki which are showing the culture of the respective states.

What should be added with the numbers of CRPF soldiers and the number of bikers so that their maximum number of column is equal to the maximum number of column of army troop?

A. 4 Soldiers and 4 Bikers

B. 12 Soldiers and 12 Bikers

C. 6 Soldiers and 6 Bikers

D. 12 Soldiers and 6 Bikers

Answer: B



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11. Shalvi wants to organize her birthday party. She was happy on her birthday. She is very health conscious, thus she decided to serve fruits only.



She has 36 apples and 60 bananas at home and decided to serve them. She want to distribute fruits among guests. She does not want to discriminate among guests so she decided to distribute equally among all.

How many maximum guests Shalvi can invite?

- A. 12
- B. 120
- C. 6

Answer: A

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12. Shalvi wants to organize her birthday party. She was happy on her birthday. She is very health conscious, thus she decided to serve fruits only.



She has 36 apples and 60 bananas at home and decided to serve them. She want to distribute fruits among guests. She does not want to discriminate among guests so she decided to distribute equally among all.

How many apples and bananas will each guest get?

A. 3 apple 5 banana

B. 5 apple 3 banana

C. 2 apple 4 banana

D. 4 apple 2 banana

Answer: A



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13. Shalvi wants to organize her birthday party. She was happy on her birthday. She is very health conscious, thus she decided to serve fruits only.



She has 36 apples and 60 bananas at home and decided to serve them. She want to distribute fruits among guests. She does not want to discriminate among guests so she decided to distribute equally among all.

Shalvi decide to add 42 mangoes also. In this case how many maximum guests Shalvi can invite ?

A. 12

B. 120

C. 6

D. 180

Answer: C



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14. Shalvi wants to organize her birthday party. She was happy on her birthday. She is very health conscious, thus she decided to serve fruits only.



She has 36 apples and 60 bananas at home and decided to serve them. She want to distribute fruits among guests. She does not want to discriminate among guests so she decided to distribute equally among all.

she also adds 42 mangoes,How many total fruits will each guest get?

- A. 6 apple 5 banana and 6 mangoes
- B. 6 apple 10 banana and 7 mangoes
- C. 3 apple 5 banana and 7 mangoes

D. 3 apple 10 banana and 6 mangoes

Answer: B



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15. Shalvi wants to organize her birthday party. She was happy on her birthday. She is very health conscious, thus she decided to serve fruits only.



She has 36 apples and 60 bananas at home and decided to serve them. She want to distribute fruits among guests. She does not want to discriminate among guests so she decided to distribute equally among all.

If Shalvi decide to add 45 mangoes instead OF 6 apple, in this case how many maximum guests Shalvi can invite ?

A. 12

B. 30

C. 15

D. 24

Answer: C



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16. Amar, Akbar and Anthony are playing a game. Amar climbs 5 stairs and gets down 2 stairs in one turn. Akbar goes up by 7 stairs and comes down by 2 stairs every time. Anthony goes 10 stairs up and 3 stairs down each

time. Doing this they have to reach to the nearest point of 100th stairs and they will stop once they find it impossible to go forward. (They have less number of stairs than required forward stairs).

Who reaches the nearest point?

- A. Amar
- B. Akbar
- C. Anthony
- D. All together reach to the nearest point.

Answer: B



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17. Amar, Akbar and Anthony are playing a game. Amar climbs 5 stairs and gets down 2 stairs in one turn. Akbar goes up by 7 stairs and comes down by 2 stairs every time. Anthony goes 10 stairs up and 3 stairs down each time. Doing this they have to reach to the nearest point of 100th stairs and they will stop once they find it impossible to go forward. (They have

less number of stairs than required forward stairs).

How many times can they meet in between on same step?

A. 3

B. 4

C. 5

D. No, they cannot meet in between on same step.

Answer: D



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18. Amar, Akbar and Anthony are playing a game. Amar climbs 5 stairs and gets down 2 stairs in one turn. Akbar goes up by 7 stairs and comes down by 2 stairs every time. Anthony goes 10 stairs up and 3 stairs down each time. Doing this they have to reach to the nearest point of 100th stairs and they will stop once they find it impossible to go forward. (They have less number of stairs than required forward stairs).

Who takes least number of steps to reach near hundred?

A. Amar

B. Akbar

C. Anthony

D. All of them take equal number of steps

Answer: C



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19. Amar, Akbar and Anthony are playing a game. Amar climbs 5 stairs and gets down 2 stairs in one turn. Akbar goes up by 7 stairs and comes down by 2 stairs every time. Anthony goes 10 stairs up and 3 stairs down each time. Doing this they have to reach to the nearest point of 100th stairs and they will stop once they find it impossible to go forward. (They have less number of stairs than required forward stairs).

What is the first stair where any two out of three will meet together?

A. Amar and Akbar will meet for the first time after 15 steps.

B. Akbar and Anthony will meet for the first time after 35 steps.

C. Amar and Anthony will meet for the first time after 21 steps.

D. Amar and Akbar will meet for the first time after 21 steps.

Answer: A



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20. Amar, Akbar and Anthony are playing a game. Amar climbs 5 stairs and gets down 2 stairs in one turn. Akbar goes up by 7 stairs and comes down by 2 stairs every time. Anthony goes 10 stairs up and 3 stairs down each time. Doing this they have to reach to the nearest point of 100th stairs and they will stop once they find it impossible to go forward. (They have less number of stairs than required forward stairs).

What is the second stair where any two out of three will meet together?

A. Amar and Akbar will meet after 21 steps.

B. Akbar and Anthony will meet after 35 steps.

C. Amar and Anthony will after 21 steps.

D. Amar and Anthony will after 35 steps.

Answer: B



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21. Ashish supplies bread and jams to a hospital and a school. Bread and jam are supplied in equal number of pieces. Bread comes in a bunch of 8 pieces and Jam comes in a pack of 6 pieces. On a particular day, Ashish has supplied x packets of bread and y packets of jam to the school. On the same day, Ashish has supplied $3x$ packets of bread along with sufficient packets of jam to hospital. It is known that the number of students in the school are between 500 and 550.

How many students are there in school?

A. 508

B. 504

C. 512

Answer: B [Watch Video Solution](#)

22. Ashish supplies bread and jams to a hospital and a school. Bread and jam are supplied in equal number of pieces. Bread comes in a bunch of 8 pieces and Jam comes in a pack of 6 pieces. On a particular day, Ashish has supplied x packets of bread and y packets of jam to the school. On the same day, Ashish has supplied $3x$ packets of bread along with sufficient packets of jam to hospital. It is known that the number of students in the school are between 500 and 550.

How many packets of bread are supplied in the school?

A. 63 packets

B. 86 packets

C. 65 packets

D. 84 packets

Answer: A



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23. Ashish supplies bread and jams to a hospital and a school. Bread and jam are supplied in equal number of pieces. Bread comes in a bunch of 8 pieces and Jam comes in a pack of 6 pieces. On a particular day, Ashish has supplied x packets of bread and y packets of jam to the school. On the same day, Ashish has supplied $3x$ packets of bread along with sufficient packets of jam to hospital. It is known that the number of students in the school are between 500 and 550.

How many packets of jams are supplied in the school?

- A. 63 packets
- B. 86 packets
- C. 65 packets
- D. 84 packets

Answer: D



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24. Ashish supplies bread and jams to a hospital and a school. Bread and jam are supplied in equal number of pieces. Bread comes in a bunch of 8 pieces and Jam comes in a pack of 6 pieces. On a particular day, Ashish has supplied x packets of bread and y packets of jam to the school. On the same day, Ashish has supplied $3x$ packets of bread along with sufficient packets of jam to hospital. It is known that the number of students in the school are between 500 and 550.

How many packets of bread are supplied in the hospital?

- A. 189 packets
- B. 252 packets
- C. 165 packets
- D. 288 packets

Answer: A



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25. Ashish supplies bread and jams to a hospital and a school. Bread and jam are supplied in equal number of pieces. Bread comes in a bunch of 8 pieces and Jam comes in a pack of 6 pieces. On a particular day, Ashish has supplied x packets of bread and y packets of jam to the school. On the same day, Ashish has supplied $3x$ packets of bread along with sufficient packets of jam to hospital. It is known that the number of students in the school are between 500 and 550.

How many packets of jams are supplied in the hospital?

- A. 248 packets
- B. 252 packets
- C. 165 packets
- D. 288 packets

Answer: B

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26. Underground water sump is popular in India. It is usually used for large water sump storage and can be built cheaply using cement-like materials. Underground water sump are typically chosen by people who want to save space. The water in the underground sump is not affected by extreme weather conditions. The underground sump maintain cool temperatures in both winter and summer.



A builder wants to build a sump to store water in an apartment. The volume of the rectangular sump will be modelled by

$$V(x) = x^3 + x^2 - 4x - 4.$$

He planned in such a way that its base dimensions are $(x + 1)$ and $(x + 2)$.

How much he has to dig ?

A. $(x + 1)$

B. $(x - 2)$

C. $(x - 3)$

D. $(x + 2)$

Answer: B



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27. Underground water sump is popular in India. It is usually used for large water sump storage and can be built cheaply using cement-like materials. Underground water sump are typically chosen by people who want to save space. The water in the underground sump is not affected by extreme weather conditions. The underground sump maintain cool temperatures in both winter and summer.



A builder wants to build a sump to store water in an apartment. The volume of the rectangular sump will be modelled by $V(x) = x^3 + x^2 - 4x - 4$.

If $x = 4$ meter, what is the volume of the sump?

- A. $30m^3$
- B. $20m^3$
- C. $15m^3$
- D. $60m^3$

Answer: D



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28. Underground water sump is popular in India. It is usually used for large water sump storage and can be built cheaply using cement-like materials. Underground water sump are typically chosen by people who want to save space. The water in the underground sump is not affected by extreme weather conditions. The underground sump maintain cool temperatures in both winter and summer.



A builder wants to build a sump to store water in an apartment. The volume of the rectangular sump will be modelled by

$$V(x) = x^3 + x^2 - 4x - 4.$$

If $x = 4$ and the builder wants to paint the entire inner portion on the sump, what is the total area to be painted ?

A. $52m^2$

B. $96m^2$

C. $208m^2$

D. $104m^2$

Answer: D



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29. Underground water sump is popular in India. It is usually used for large water sump storage and can be built cheaply using cement-like materials. Underground water sump are typically chosen by people who want to save space. The water in the underground sump is not affected by extreme weather conditions. The underground sump maintain cool temperatures in both winter and summer.



A builder wants to build a sump to store water in an apartment. The volume of the rectangular sump will be modelled by $V(x) = x^3 + x^2 - 4x - 4$.

If the cost of paint is Rs. 25/ per square metre, what is the cost of painting ?

- A. 3900 Rs
- B. 2600 Rs
- C. 1300 Rs
- D. 5200 Rs

Answer: B

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30. Underground water sump is popular in India. It is usually used for large water sump storage and can be built cheaply using cement-like materials. Underground water sump are typically chosen by people who want to save space. The water in the underground sump is not affected by extreme weather conditions. The underground sump maintain cool temperatures in both winter and summer.



A builder wants to build a sump to store water in an apartment. The volume of the rectangular sump will be modelled by

$$V(x) = x^3 + x^2 - 4x - 4.$$

What is the storage capacity of this sump ?

A. 3000 litre

B. 6000 litre

C. 60000 litre

D. 30000 litre

Answer: C



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31. For the box to satisfy certain requirements, its length must be three meter greater than the width, and its height must be two meter less than the width.



If width is taken as x , which of the following polynomial represent volume of box ?

A. $x^2 - 5x - 6$

B. $x^3 + x^2 - 6x$

C. $x^3 - 6x^2 - 6x$

D. $x^2 + x - 6$

Answer: D



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32. For the box to satisfy certain requirements, its length must be three meter greater than the width, and its height must be two meter less than the width.



Which of the following polynomial represent the area of paper sheet used to make box ?

A. $x^2 - 5x - 6$

B. $6x^2 + 4x - 12$

C. $x^3 - 6x^2 - 6x$

D. $6x^2 + 3x - 4$

Answer: B



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33. For the box to satisfy certain requirements, its length must be three meter greater than the width, and its height must be two meter less than the width.



If it must have a volume of 18 unit, what must be its length ?

A. 6 unit

B. 3 unit

C. 4 unit

D. 2 unit

Answer: A



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34. For the box to satisfy certain requirements, its length must be three meter greater than the width, and its height must be two meter less than the width.



At a volume of 18 cubic unit, what must be its height ?

- A. 1 unit
- B. 3 unit
- C. 2 unit
- D. 4 unit

Answer: A



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35. For the box to satisfy certain requirements, its length must be three meter greater than the width, and its height must be two meter less than the width.



If box is made of a paper sheet which cost is 100 rs per square unit, what is the cost of paper?

- A. Rs 5400
- B. Rs 10800
- C. Rs 2700
- D. Rs 3400

Answer: A



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36. Pyramid, in architecture, a monumental structure constructed of or faced with stone or brick and having a rectangular base and four sloping triangular (or sometimes trapezoidal) sides meeting at an apex (or truncated to form a platform). Pyramids have been built at various times in Egypt, Sudan, Ethiopia, western Asia, Greece, Cyprus, Italy, India, Thailand, Mexico, South America, and on some islands of the Pacific Ocean. Those of Egypt and of Central and South America are the best known.



The volume and surface area of a pyramid with a square base of area a^2 and height h is given by

$$V = \frac{ha^2}{3} \text{ and } S = a^2 + 2a\sqrt{\left(\frac{a}{2}\right)^2 + h^2}$$

A powerful crystal pyramid has a square base and a volume of $3y^3 + 18y^2 + 27y$ cubic units.

If its height is y , then what polynomial represents the length of a side of the square base ?

A. $9(y + 3)$

B. $9(y + 3)^2$

C. $3(y + 3)$

D. $3(y + 3)^2$

Answer: C



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37. Pyramid, in architecture, a monumental structure constructed of or faced with stone or brick and having a rectangular base and four sloping triangular (or sometimes trapezoidal) sides meeting at an apex (or truncated to form a platform). Pyramids have been built at various times in Egypt, Sudan, Ethiopia, western Asia, Greece, Cyprus, Italy, India, Thailand, Mexico, South America, and on some islands of the Pacific Ocean. Those of Egypt and of Central and South America are the best known.



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If area of base is 576 square unit, what is the side of base?

- A. 24 metre
- B. 16 metre
- C. 13 metre
- D. 12 metre

Answer: A



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38. Pyramid, in architecture, a monumental structure constructed of or faced with stone or brick and having a rectangular base and four sloping triangular (or sometimes trapezoidal) sides meeting at an apex (or truncated to form a platform). Pyramids have been built at various times in Egypt, Sudan, Ethiopia, western Asia, Greece, Cyprus, Italy, India, Thailand, Mexico, South America, and on some islands of the Pacific Ocean. Those of Egypt and of Central and South America are the best known.



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A powerful crystal pyramid has a square base and a volume of $3y^3 + 18y^2 + 27y$ cubic units.

What is the height of pyramid at above area of base ?

- A. 4 metre
- B. 6 metre
- C. 5 metre
- D. 12 metre

Answer: C



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39. Pyramid, in architecture, a monumental structure constructed of or faced with stone or brick and having a rectangular base and four sloping triangular (or sometimes trapezoidal) sides meeting at an apex (or truncated to form a platform). Pyramids have been built at various times in Egypt, Sudan, Ethiopia, western Asia, Greece, Cyprus, Italy, India, Thailand, Mexico, South America, and on some islands of the Pacific Ocean. Those of Egypt and of Central and South America are the best known.



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A powerful crystal pyramid has a square base and a volume of $3y^3 + 18y^2 + 27y$ cubic units.

What is ratio of length of side to the height ?

- A. $\frac{1}{5}$
- B. $\frac{2}{5}$
- C. $\frac{5}{24}$
- D. $\frac{5}{3}$

Answer: C



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40. Pyramid, in architecture, a monumental structure constructed of or faced with stone or brick and having a rectangular base and four sloping triangular (or sometimes trapezoidal) sides meeting at an apex (or truncated to form a platform). Pyramids have been built at various times in Egypt, Sudan, Ethiopia, western Asia, Greece, Cyprus, Italy, India, Thailand, Mexico, South America, and on some islands of the Pacific Ocean. Those of Egypt and of Central and South America are the best known.



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A powerful crystal pyramid has a square base and a volume of $3y^3 + 18y^2 + 27y$ cubic units.

What is surface area of pyramid ?

- A. 800 square unit
- B. 2400 square unit
- C. 1200 square unit
- D. 1600 square unit

Answer: C

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41. Maximum profit: A barrels manufacturer can produce up to 300 barrels per day. The profit made from the sale of these barrels can be modelled by the function $P(x) = -10x^2 + 3500x - 66000$ where $P(x)$ is the profit in rupees and x is the number of barrels made and sold.



Based on this model answer the following questions:

When no barrels are produce what is a profit loss?

A. 22000

B. 66000

C. 11000

D. 33000

Answer: B



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42. Maximum profit: An barrels manufacturer can produce up to 300 barrels per day. The profit made from the sale of these barrels can be modelled by the function $P(x) = -10x^2 + 3500x - 66000$ where $P(x)$ is the profit in rupees and x is the number of barrels made and sold.



Based on this model answer the following questions:

What is the break even point ? (Zero profit point is called break even)

- A. 10 barrels
- B. 30 barrels
- C. 20 barrels
- D. 100 barrels

Answer: C



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43. Maximum profit: An barrels manufacturer can produce up to 300 barrels per day. The profit made from the sale of these barrels can be modelled by the function $P(x) = -10x^2 + 3500x - 66000$ where $P(x)$ is the profit in rupees and x is the number of barrels made and sold.



Based on this model answer the following questions:

What is the profit/loss if 175 barrels are produced

- A. Profit 266200
- B. Loss 266200
- C. Profit 240250
- D. Loss 240250

Answer: C

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44. Maximum profit: An barrels manufacturer can produce up to 300 barrels per day. The profit made from the sale of these barrels can be modelled by the function $P(x) = -10x^2 + 3500x - 66000$ where $P(x)$ is the profit in rupees and x is the number of barrels made and sold.



Based on this model answer the following questions:

What is the profit/loss if 400 barrels are produced

A. Profit 266200

B. Loss 266200

C. Profit 342000

D. Loss 342000

Answer: B



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45. Maximum profit: An barrels manufacturer can produce up to 300 barrels per day. The profit made from the sale of these barrels can be modelled by the function $P(x) = -10x^2 + 3500x - 66000$ where $P(x)$ is the profit in rupees and x is the number of barrels made and sold.



Based on this model answer the following questions:

What is the maximum profit which can manufacturer earn?

- A. Rs 240250
- B. Rs 480500
- C. Rs 680250
- D. Rs 240250

Answer: A



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46. Dipesh bought 3 notebooks and 2 pens for Rs. 80. His friend Ramesh said that price of each notebook could be Rs. 25. Then three notebooks would cost Rs.75, the two pens would cost Rs. 5 and each pen could be for Rs. 2.50. Another friend Amar felt that Rs. 2.50 for one pen was too little. It should be at least Rs. 16. Then the price of each notebook would also be Rs.16.

Lokesh also bought the same types of notebooks and pens as Dipesh. He paid 110 for 4 notebooks and 3 pens

Let the cost of one notebook be x and that of pen be y . Which of the following set describe the given problem ?

A. $2x + 3y = 80$ and $3x + 4y = 110$

B. $3x + 2y = 80$ and $4x + 3y = 110$

C. $3x + 2y = 80$ and $4x + 3y = 110$

D. $3x + 2y = 80$ and $3x + 4y = 110$

Answer: B



[View Text Solution](#)

47. Dipesh bought 3 notebooks and 2 pens for Rs. 80. His friend Ramesh said that price of each notebook could be Rs. 25. Then three notebooks would cost Rs.75, the two pens would cost Rs. 5 and each pen could be for Rs. 2.50. Another friend Amar felt that Rs. 2.50 for one pen was too little. It should be at least Rs. 16. Then the price of each notebook would also be Rs.16.

Lokesh also bought the same types of notebooks and pens as Dipesh. He paid 110 for 4 notebooks and 3 pens

Whether the estimation of Ramesh and Amar is applicable for Lokesh?

- A. Ramesh's estimation is wrong but Amar's estimation is correct.
- B. Ramesh's estimation is correct but Amar's estimation is wrong
- C. Both estimation are correct.
- D. Ramesh's estimation is wrong but Amar's estimation is also wrong.

Answer: D



[View Text Solution](#)

48. Dipesh bought 3 notebooks and 2 pens for Rs. 80. His friend Ramesh said that price of each notebook could be Rs. 25. Then three notebooks would cost Rs.75, the two pens would cost Rs. 5 and each pen could be for Rs. 2.50. Another friend Amar felt that Rs. 2.50 for one pen was too little. It should be at least Rs. 16. Then the price of each notebook would also be Rs.16.

Lokesh also bought the same types of notebooks and pens as Dipesh. He paid 110 for 4 notebooks and 3 pens

What is the exact cost of the notebook?

A. Rs 10

B. Rs 20

C. Rs 16

D. Rs 24

Answer: B



View Text Solution

49. Dipesh bought 3 notebooks and 2 pens for Rs. 80. His friend Ramesh said that price of each notebook could be Rs. 25. Then three notebooks would cost Rs.75, the two pens would cost Rs. 5 and each pen could be for Rs. 2.50. Another friend Amar felt that Rs. 2.50 for one pen was too little. It should be at least Rs. 16. Then the price of each notebook would also be Rs.16.

Lokesh also bought the same types of notebooks and pens as Dipesh. He paid 110 for 4 notebooks and 3 pens

What is the exact cost of the pen?

A. Rs 10

B. Rs 20

C. Rs 16

D. Rs 24

Answer: A



View Text Solution

50. Dipesh bought 3 notebooks and 2 pens for Rs. 80. His friend Ramesh said that price of each notebook could be Rs. 25. Then three notebooks would cost Rs.75, the two pens would cost Rs. 5 and each pen could be for Rs. 2.50. Another friend Amar felt that Rs. 2.50 for one pen was too little. It should be at least Rs. 16. Then the price of each notebook would also be Rs.16.

Lokesh also bought the same types of notebooks and pens as Dipesh. He paid 110 for 4 notebooks and 3 pens

What is the total cost if they will purchase the same type of 15 notebooks and 12 pens.

- A. Rs 410
- B. Rs 200
- C. Rs 420
- D. Rs 240

Answer: C



[View Text Solution](#)

51. Mr. RK Agrawal is owner of a famous amusement park in Delhi. Generally he does not go to park and it is managed by team of staff. The ticket charge for the park is Rs 150 for children and Rs 400 for adults.



One day Mr Agrawal decided to random check the park and went there. When he checked the cash counter, he found that 480 tickets were sold and Rs 134500 was collected.

Let the number of children visited be x and the number of adults visited be y . Which of the following is the correct system of equation that model the problem ?

A. $x + y = 480$ and $3x + 8y = 2690$

B. $x + 2y = 480$ and $3x + 4y = 2690$

C. $x + y = 480$ and $3x + 4y = 2690$

D. $x + 2y = 480$ and $3x + 8y = 2690$

Answer: A



Watch Video Solution

52. Mr. RK Agrawal is owner of a famous amusement park in Delhi. Generally he does not go to park and it is managed by team of staff. The ticket charge for the park is Rs 150 for children and Rs 400 for adults.



One day Mr Agrawal decided to random check the park and went there. When he checked the cash counter, he found that 480 tickets were sold

and Rs 134500 was collected.

How many children attended?

A. 250

B. 500

C. 230

D. 460

Answer: C



Watch Video Solution

53. Mr. RK Agrawal is owner of a famous amusement park in Delhi. Generally he does not go to park and it is managed by team of staff. The ticket charge for the park is Rs 150 for children and Rs 400 for adults.



One day Mr Agrawal decided to random check the park and went there. When he checked the cash counter, he found that 480 tickets were sold and Rs 134500 was collected.

How many adults attended?

- A. 250
- B. 500
- C. 230
- D. 460

Answer: A



Watch Video Solution

54. Mr. RK Agrawal is owner of a famous amusement park in Delhi. Generally he does not go to park and it is managed by team of staff. The ticket charge for the park is Rs 150 for children and Rs 400 for adults.



One day Mr Agrawal decided to random check the park and went there. When he checked the cash counter, he found that 480 tickets were sold and Rs 134500 was collected.

How much amount collected if 300 children and 350 adults attended?

A. Rs 225400

B. Rs 154000

C. Rs 112500

D. Rs 185000

Answer: D



Watch Video Solution

55. Mr. RK Agrawal is owner of a famous amusement park in Delhi. Generally he does not go to park and it is managed by team of staff. The ticket charge for the park is Rs 150 for children and Rs 400 for adults.



One day Mr Agrawal decided to random check the park and went there. When he checked the cash counter, he found that 480 tickets were sold and Rs 134500 was collected.

One day total attended children and adults together is 750 and the total amount collected is Rs 212500. What are the number of children and adults attended ?

A. (700, 800)

B. (350, 400)

C. (800, 700)

D. (400, 350)

Answer: B



Watch Video Solution

56. In the 1961–1962 NBA basketball season, Wilt Chamberlain of the Philadelphia Warriors made 30 baskets. Some of the baskets were free throws (worth 1 point each) and some were field goals (worth 2 points each). The number of field goals was 10 more than the number of free throws.



How many field goals did he make ?

- A. 10 Goals
- B. 20 Goals
- C. 15 Goals
- D. 18 Goals

Answer: B



[Watch Video Solution](#)

57. In the 1961–1962 NBA basketball season, Wilt Chamberlain of the Philadelphia Warriors made 30 baskets. Some of the baskets were free throws (worth 1 point each) and some were field goals (worth 2 points each). The number of field goals was 10 more than the number of free throws.



How many free throws did he make?

- A. 10 Goals
- B. 20 Goals
- C. 15 Goals
- D. 18 Goals

Answer: A

[Watch Video Solution](#)

58. In the 1961–1962 NBA basketball season, Wilt Chamberlain of the Philadelphia Warriors made 30 baskets. Some of the baskets were free throws (worth 1 point each) and some were field goals (worth 2 points each). The number of field goals was 10 more than the number of free throws.



What was the total number of points scored?

A. 50

B. 80

C. 60

D. 45

Answer: A



Watch Video Solution

59. In the 1961–1962 NBA basketball season, Wilt Chamberlain of the Philadelphia Warriors made 30 baskets. Some of the baskets were free throws (worth 1 point each) and some were field goals (worth 2 points each). The number of field goals was 10 more than the number of free throws.



If Wilt Chamberlain played 5 games during this season, what was the average number of points per game?

- A. 5
- B. 8
- C. 10
- D. 4

Answer: C



[Watch Video Solution](#)

60. In the 1961–1962 NBA basketball season, Wilt Chamberlain of the Philadelphia Warriors made 30 baskets. Some of the baskets were free throws (worth 1 point each) and some were field goals (worth 2 points each). The number of field goals was 10 more than the number of free throws.



If Wilt Chamberlain played 10 games during this season, what was the average number of points per game?

- A. 6
- B. 8
- C. 4

Answer: D



Watch Video Solution

61. Riya has a field with a flowerbed and grass land. The grass land is in the shape of rectangle while flowerbed is in the shape of square. The length of the grassland is found to be 3 m more than twice the length of the flowerbed. Total area of the whole land is 1260 m^2 .

Grass

Flower Bed



If the length of the flowerbed is x m then what is the total length of the field ?

A. $(2x + 3)m$

B. $(3x + 3)m$

C. $6xm$

D. $(2x + 5)m$

Answer: B



[View Text Solution](#)

62. Riya has a field with a flowerbed and grass land. The grass land is in the shape of rectangle while flowerbed is in the shape of square. The length of the grassland is found to be 3 m more than twice the length of the flowerbed. Total area of the whole land is 1260 m^2 .

Grass

Flower Bed



What will be the perimeter of the whole field?

A. $(8x + 6)m$

B. $(6x + 8)m$

C. $(4x + 3)m$

D. $(4x + 3)m$

Answer: A



[View Text Solution](#)

63. Riya has a field with a flowerbed and grass land. The grass land is in the shape of rectangle while flowerbed is in the shape of square. The length of the grassland is found to be 3 m more than twice the length of the flowerbed. Total area of the whole land is 1260 m^2 .

Grass

Flower Bed



What is the value of x if the area of total field is 1260 m^2 .

A. 21 m

B. 10 m

C. 20 m

D. 15 m

Answer: C



View Text Solution

64. Riya has a field with a flowerbed and grass land. The grass land is in the shape of rectangle while flowerbed is in the shape of square. The length of the grassland is found to be 3 m more than twice the length of the flowerbed. Total area of the whole land is 1260 m^2 .

Grass

Flower Bed



What is the area of grassland ?

- A. $180m^2$
- B. $360m^2$
- C. $400m^2$
- D. $860m^2$

Answer: C



[View Text Solution](#)

65. Riya has a field with a flowerbed and grass land. The grass land is in the shape of rectangle while flowerbed is in the shape of square. The length of the grassland is found to be 3 m more than twice the length of

the flowerbed. Total area of the whole land is 1260 m^2 .

Grass

Flower Bed



What is the ratio of area of flowerbed to area of grassland ?

A. $\frac{20}{43}$

B. $\frac{23}{40}$

C. $\frac{26}{43}$

D. $\frac{23}{46}$

Answer: A



[View Text Solution](#)

66. John and Priya went for a small picnic. After having their lunch Priya insisted to travel in a motor boat. The speed of the motor boat was 20

km/hr. Priya being a Mathematics student wanted to know the speed of the current. So she noted the time for upstream and downstream. She found that for covering the distance of 15 km the boat took 1 hour more for upstream than downstream.

Let speed of the stream be x km/hr. then speed of the motorboat in upstream will be

A. $20\text{km} / \text{hr}$

B. $(20 + x)\text{km} / \text{hr}$

C. $(20 - x)\text{km} / \text{hr}$

D. $2\text{km} / \text{hr}$

Answer: C



[View Text Solution](#)

67. John and Priya went for a small picnic. After having their lunch Priya insisted to travel in a motor boat. The speed of the motor boat was 20 km/hr. Priya being a Mathematics student wanted to know the speed of

the current. So she noted the time for upstream and downstream. She found that for covering the distance of 15 km the boat took 1 hour more for upstream than downstream.

What is the relation between speed distance and time?

- A. speed = (distance)/time
- B. distance = (speed)/time
- C. time = speed \times distance
- D. none of these

Answer: B

 [View Text Solution](#)

68. John and Priya went for a small picnic. After having their lunch Priya insisted to travel in a motor boat. The speed of the motor boat was 20 km/hr. Priya being a Mathematics student wanted to know the speed of the current. So she noted the time for upstream and downstream. She found that for covering the distance of 15 km the boat took 1 hour more

for upstream than downstream.

Which is the correct quadratic equation for the speed of the current ?

A. $x^2 + 30x - 200 = 0$

B. $x^2 + 20x - 400 = 0$

C. $x^2 + 30x - 400 = 0$

D. $x^2 - 20x - 400 = 0$

Answer: C



[View Text Solution](#)

69. John and Priya went for a small picnic. After having their lunch Priya insisted to travel in a motor boat. The speed of the motor boat was 20 km/hr. Priya being a Mathematics student wanted to know the speed of the current. So she noted the time for upstream and downstream. She found that for covering the distance of 15 km the boat took 1 hour more for upstream than downstream.

What is the speed of current ?

A. 20 km/hour

B. 10 km/hour

C. 15 km/hour

D. 25 km/hour

Answer: C



View Text Solution

70. John and Priya went for a small picnic. After having their lunch Priya insisted to travel in a motor boat. The speed of the motor boat was 20 km/hr. Priya being a Mathematics student wanted to know the speed of the current. So she noted the time for upstream and downstream. She found that for covering the distance of 15 km the boat took 1 hour more for upstream than downstream.

How much time boat took in downstream ?

A. 90 minute

B. 15 minute

C. 30 minute

D. 45 minute

Answer: C



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71. Nidhi and Ria are very close friends. Nidhi's parents own a Maruti Alto. Ria's parents own a Toyota Liva. Both the families decide to go for a picnic to Somnath temple in Gujrat by their own cars.



Nidhi's car travels x km/h while Ria's car travels 5 km/h more than Nidhi's car. Nidhi's car took 4 hrs more than Ria's car in covering 400 km.

What will be the distance covered by Ria's car in two hour?

A. $2(x + 5)km$

B. $(x - 5)km$

C. $2(x + 10)km$

D. $(2x + 5)km$

Answer: A



[View Text Solution](#)

72. Nidhi and Ria are very close friends. Nidhi's parents own a Maruti Alto. Ria's parents own a Toyota Liva. Both the families decide to go for a picnic to Somnath temple in Gujrat by their own cars.



Nidhi's car travels x km/h while Ria's car travels 5 km/h more than Nidhi's car. Nidhi's car took 4 hrs more than Ria's car in covering 400 km.

Which of the following quadratic equation describe the speed of Nidhi's car?

A. $x^2 - 5x - 500 = 0$

B. $x^2 + 4x - 400 = 0$

C. $x^2 + 5x - 500 = 0$

D. $x^2 - 4x + 400 = 0$

Answer: C



[View Text Solution](#)

73. Nidhi and Ria are very close friends. Nidhi's parents own a Maruti Alto. Ria's parents own a Toyota Liva. Both the families decide to go for a picnic to Somnath temple in Gujrat by their own cars.



Nidhi's car travels x km/h while Ria's car travels 5 km/h more than Nidhi's car. Nidhi's car took 4 hrs more than Ria's car in covering 400 km.

What is the the speed of Nidhi's car?

- A. 20 km/hour
- B. 15 km/hour
- C. 25 km/hour

D. 10 km/hour

Answer: A

 [View Text Solution](#)

74. Nidhi and Ria are very close friends. Nidhi's parents own a Maruti Alto. Ria's parents own a Toyota Liva. Both the families decide to go for a picnic to Somnath temple in Gujrat by their own cars.



Nidhi's car travels x km/h while Ria's car travels 5 km/h more than Nidhi's car. Nidhi's car took 4 hrs more than Ria's car in covering 400 km.

How much time took Ria to travel 400 km?

A. 20 hour

B. 40 hour

C. 25 hour

D. 16 hour

Answer: D



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75. In an auditorium, seats are arranged in rows and columns. The number of rows were equal to the number of seats in each row. When the number of rows were doubled and the number of seats in each row was reduced by 10, the total number of seats increased by 300.



If x is taken as number of row in original arrangement which of the following quadratic equation describe the situation ?

A. $x^2 - 20x - 300 = 0$

B. $x^2 + 20x - 300 = 0$

C. $x^2 - 20x + 300 = 0$

D. $x^2 + 20x + 300 = 0$

Answer: A



Watch Video Solution

76. In an auditorium, seats are arranged in rows and columns. The number of rows were equal to the number of seats in each row. When the number of rows were doubled and the number of seats in each row was reduced by 10, the total number of seats increased by 300.



How many number of rows are there in the original arrangement?

- A. 20
- B. 40
- C. 10
- D. 30

Answer: D



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77. In an auditorium, seats are arranged in rows and columns. The number of rows were equal to the number of seats in each row. When the number of rows were doubled and the number of seats in each row was reduced by 10, the total number of seats increased by 300.



How many number of seats are there in the auditorium in original arrangement ?

A. 725

B. 400

C. 900

D. 680

Answer: C



Watch Video Solution

78. In an auditorium, seats are arranged in rows and columns. The number of rows were equal to the number of seats in each row. When the number of rows were doubled and the number of seats in each row was reduced by 10, the total number of seats increased by 300.



How many number of seats are there in the auditorium after re-arrangement.

A. 860

B. 990

C. 1200

D. 960

Answer: C



Watch Video Solution

79. In an auditorium, seats are arranged in rows and columns. The number of rows were equal to the number of seats in each row. When the number of rows were doubled and the number of seats in each row was reduced by 10, the total number of seats increased by 300.



How many number of columns are there in the auditorium after re-arrangement?

- A. 42
- B. 20
- C. 25
- D. 32

Answer: B



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80. Some students planned a picnic. The total budget for picnic was Rs 2000 but 5 students failed to attend the picnic and thus the contribution for each student is increased by Rs 20.



S. No.	Article	Cost per student
1	Entry ticket	Rs 5
2	Coffee	Rs 10
3	Food	Rs 25
4	Travelling cost	Rs 50
5	Ice-cream	Rs 15

If x is the number of students planned for picnic, which is the correct quadratic equation that describe the situation.

A. $x^2 - 5x - 500 = 0$

B. $x^2 + 4x - 400 = 0$

C. $x^2 + 5x - 500 = 0$

D. $x^2 - 4x + 400 = 0$

Answer: A



Watch Video Solution

81. Some students planned a picnic. The total budget for picnic was Rs 2000 but 5 students failed to attend the picnic and thus the contribution for each student is increased by Rs 20.



S. No.	Article	Cost per student
1	Entry ticket	Rs 5
2	Coffee	Rs 10
3	Food	Rs 25
4	Travelling cost	Rs 50
5	Ice-cream	Rs 15

What is the number of students planned for picnic ?

A. 30

B. 40

C. 25

D. 20

Answer: C

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82. Some students planned a picnic. The total budget for picnic was Rs 2000 but 5 students failed to attend the picnic and thus the contribution for each student is increased by Rs 20.



S. No.	Article	Cost per student
1	Entry ticket	Rs 5
2	Coffee	Rs 10
3	Food	Rs 25
4	Travelling cost	Rs 50
5	Ice-cream	Rs 15

What is the number of students who attended the picnic?

- A. 20
- B. 40
- C. 15
- D. 25

Answer: A



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83. Some students planned a picnic. The total budget for picnic was Rs 2000 but 5 students failed to attend the picnic and thus the contribution

for each student is increased by Rs 20.



S. No.	Article	Cost per student
1	Entry ticket	Rs 5
2	Coffee	Rs 10
3	Food	Rs 25
4	Travelling cost	Rs 50
5	Ice-cream	Rs 15

What is the total expense for this picnic ?

A. Rs 1500

B. Rs 2000

C. Rs 1000

D. Rs 2100

Answer: C



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84. Some students planned a picnic. The total budget for picnic was Rs 2000 but 5 students failed to attend the picnic and thus the contribution for each student is increased by Rs 20.



S. No.	Article	Cost per student
1	Entry ticket	Rs 5
2	Coffee	Rs 10
3	Food	Rs 25
4	Travelling cost	Rs 50
5	Ice-cream	Rs 15

How much money they spent for travelling ?

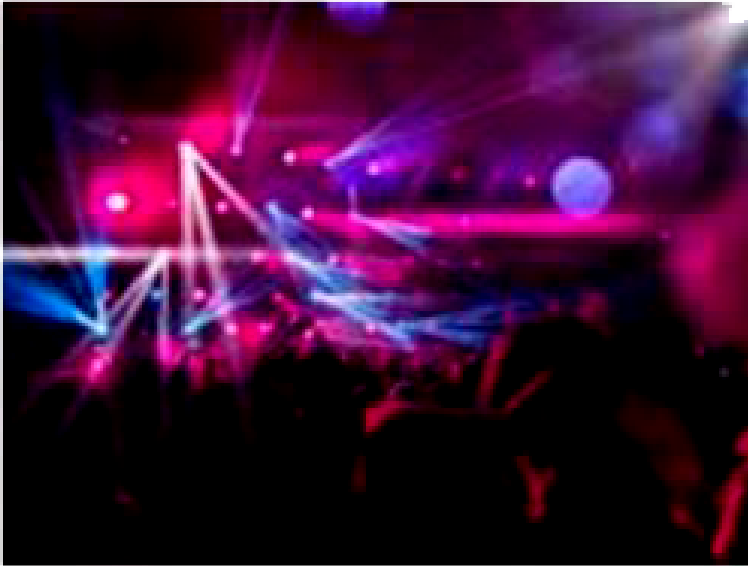
- A. Rs 500
- B. Rs 1000
- C. Rs 800
- D. Rs 3750

Answer: B



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85. The director of the Blue Rose club must decide what to charge for a ticket to the club's performance of The Music Man. If the price is set too low, the club will lose money, and if the price is too high, people won't come. From past experience she estimates that the profit P from sales (in hundreds) can be approximated by $P(x) = -x^2 + 22x - 40$ where x is the cost of a ticket and $0 \leq x \leq 25$ thousand rupees.



What is the lowest cost of a ticket that would allow the club to break even.

- A. Rs 3 thousand
- B. Rs 4 thousand

C. Rs 2 thousand

D. Rs 1 thousand

Answer: C



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86. The director of the Blue Rose club must decide what to charge for a ticket to the club's performance of The Music Man. If the price is set too low, the club will lose money, and if the price is too high, people won't come. From past experience she estimates that the profit P from sales (in hundreds) can be approximated by $P(x) = -x^2 + 22x - 40$ where x is the cost of a ticket and $0 \leq x \leq 25$ thousand rupees.



What is the highest cost that the club can charge to break even?

- A. Rs 16 thousand
- B. Rs 14 thousand
- C. Rs 4 thousands
- D. Rs 20 thousand

Answer: D



[View Text Solution](#)

87. The director of the Blue Rose club must decide what to charge for a ticket to the club's performance of The Music Man. If the price is set too low, the club will lose money, and if the price is too high, people won't come. From past experience she estimates that the profit P from sales (in hundreds) can be approximated by $P(x) = -x^2 + 22x - 40$ where x is the cost of a ticket and $0 \leq x \leq 25$ thousand rupees.



If club charge Rs 4 thousand for each ticket, what is the profit/loss ?

- A. Loss Rs 16 thousand
- B. Profit Rs 16 thousand

C. Loss Rs 32 thousand

D. Profit Rs 32 thousand

Answer: D



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88. The director of the Blue Rose club must decide what to charge for a ticket to the club's performance of The Music Man. If the price is set too low, the club will lose money, and if the price is too high, people won't come. From past experience she estimates that the profit P from sales (in hundreds) can be approximated by $P(x) = -x^2 + 22x - 40$ where x is the cost of a ticket and $0 \leq x \leq 25$ thousand rupees.



If club charge Rs 25 thousand for each ticket, what is the profit/loss ?

- A. Loss Rs 115 thousand
- B. Profit Rs 85 thousand
- C. Loss Rs 85 thousand
- D. Profit Rs 115 thousand

Answer: A

 [View Text Solution](#)

89. The director of the Blue Rose club must decide what to charge for a ticket to the club's performance of The Music Man. If the price is set too low, the club will lose money, and if the price is too high, people won't come. From past experience she estimates that the profit P from sales (in hundreds) can be approximated by $P(x) = -x^2 + 22x - 40$ where x is the cost of a ticket and $0 \leq x \leq 25$ thousand rupees.



What is the maximum profit which can be earned by club ?

A. Rs 40 thousand

B. Rs 81 thousand

C. Rs 61 thousand

D. Rs 42 thousand

Answer: B



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90. The Kendriya Vidyalaya Sangathan is a system of premier central government schools in India that are instituted under the aegis of the Ministry of Education (MHRD), Government of India. As of October 2020, it has a total of 1239 schools. It is one of the world's largest chains of schools. The system came into being in 1963 under the name 'Central Schools'. Later, the name was changed to Kendriya Vidyalaya. It is a non profit organisation. Its schools are all affiliated to the Central Board of Secondary Education (CBSE). The objective of KVS is to cater to the educational needs of the children of transferable Central Government employees including Defence and Para-Military personnel by providing a common programme of education.



Commissioner of Regional office Jaipur prepare a table of the marks obtained of 100 students which is given below

Marks obtained	0-20	20-40	40-60	60-80	80-100
Number of students	15	18	21	29	p

He was told that mean marks of a student is 53.

How many students got marks between 80-100?

- A. 21
- B. 38
- C. 17
- D. 26

Answer: C



[View Text Solution](#)

91. The Kendriya Vidyalaya Sangathan is a system of premier central government schools in India that are instituted under the aegis of the Ministry of Education (MHRD), Government of India. As of October 2020, it has a total of 1239 schools. It is one of the world's largest chains of schools. The system came into being in 1963 under the name 'Central Schools'. Later, the name was changed to Kendriya Vidyalaya. It is a non profit organisation. Its schools are all affiliated to the Central Board of Secondary Education (CBSE). The objective of KVS is to cater to the educational needs of the children of transferable Central Government employees including Defence and Para-Military personnel by providing a common programme of education.



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Marks obtained	0-20	20-40	40-60	60-80	80-100
Number of students	15	18	21	29	p

He was told that mean marks of a student is 53.

What is the lower limit of model class ?

- A. 20
- B. 40
- C. 60
- D. 80

Answer: C



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92. The Kendriya Vidyalaya Sangathan is a system of premier central government schools in India that are instituted under the aegis of the Ministry of Education (MHRD), Government of India. As of October 2020, it has a total of 1239 schools. It is one of the world's largest chains of schools. The system came into being in 1963 under the name 'Central Schools'. Later, the name was changed to Kendriya Vidyalaya. It is a non profit organisation. Its schools are all affiliated to the Central Board of Secondary Education (CBSE). The objective of KVS is to cater to the educational needs of the children of transferable Central Government employees including Defence and Para-Military personnel by providing a common programme of education.



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Marks obtained	0-20	20-40	40-60	60-80	80-100
Number of students	15	18	21	29	p

He was told that mean marks of a student is 53.

What is the value of model marks ?

- A. 58
- B. 62
- C. 65
- D. 68

Answer: D



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93. The Kendriya Vidyalaya Sangathan is a system of premier central government schools in India that are instituted under the aegis of the Ministry of Education (MHRD), Government of India. As of October 2020, it has a total of 1239 schools. It is one of the world's largest chains of schools. The system came into being in 1963 under the name 'Central Schools'. Later, the name was changed to Kendriya Vidyalaya. It is a non profit organisation. Its schools are all affiliated to the Central Board of Secondary Education (CBSE). The objective of KVS is to cater to the educational needs of the children of transferable Central Government employees including Defence and Para-Military personnel by providing a common programme of education.



Commissioner of Regional office Jaipur prepare a table of the marks obtained of 100 students which is given below

Marks obtained	0-20	20-40	40-60	60-80	80-100
Number of students	15	18	21	29	p

He was told that mean marks of a student is 53.

What is the value of median marks ?

- A. 58
- B. 62
- C. 65
- D. 72

Answer: A



94. The Kendriya Vidyalaya Sangathan is a system of premier central government schools in India that are instituted under the aegis of the Ministry of Education (MHRD), Government of India. As of October 2020, it has a total of 1239 schools. It is one of the world's largest chains of schools. The system came into being in 1963 under the name 'Central Schools'. Later, the name was changed to Kendriya Vidyalaya. It is a non profit organisation. Its schools are all affiliated to the Central Board of Secondary Education (CBSE). The objective of KVS is to cater to the educational needs of the children of transferable Central Government employees including Defence and Para-Military personnel by providing a common programme of education.



Commissioner of Regional office Jaipur prepare a table of the marks obtained of 100 students which is given below

Marks obtained	0-20	20-40	40-60	60-80	80-100
Number of students	15	18	21	29	p

He was told that mean marks of a student is 53.

What is the upper limit of median class ?

- A. 20
- B. 40
- C. 60
- D. 80

Answer: C

[View Text Solution](#)

95. In the following frequency distribution, find the median class.

Height (in cm)	104- 145	145- 150	150- 155	155- 160	160- 165	165- 170
Frequency	5	15	25	30	15	10

What is the upper limit of median class ?

- A. 150
- B. 160
- C. 155
- D. 165

Answer: B

[View Text Solution](#)

96. In the following frequency distribution, find the median class.

Height (in cm)	104- 145	145- 150	150- 155	155- 160	160- 165	165- 170
Frequency	5	15	25	30	15	10

What is the value of median height ?

A. 145.67

B. 157.67

C. 155.83

D. 159.67

Answer: C



[View Text Solution](#)

97. In the following frequency distribution, find the median class.

Height (in cm)	104- 145	145- 150	150- 155	155- 160	160- 165	165- 170
Frequency	5	15	25	30	15	10

What is the lower limit of model class ?

A. 150

B. 160

C. 155

D. 165

Answer: C



[View Text Solution](#)

98. In the following frequency distribution, find the median class.

Height (in cm)	104- 145	145- 150	150- 155	155- 160	160- 165	165- 170
Frequency	5	15	25	30	15	10

What is the value of model marks ?

A. 155.25

B. 156.25

C. 157.25

D. 159.25

Answer: B



[View Text Solution](#)

99. In the following frequency distribution, find the median class.

Height (in cm)	104- 145	145- 150	150- 155	155- 160	160- 165	165- 170
Frequency	5	15	25	30	15	10

What is the value of mean height ?

A. 155.625

B. 156.250

C. 158.500

D. 159.275

Answer: A



100. Amul, is an Indian dairy cooperative society, based at Anand in the Gujarat. Formed in 1946, it is a cooperative brand managed by a cooperative body, the Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF), which today is jointly owned by 36 lakh (3.6 million) milk producers in Gujarat. Amul spurred India's White Revolution, which made the country the world's largest producer of milk and milk products



Survey manager of Amul dairy has recorded monthly expenditures on milk in 100 families of a housing society. This is given in the following frequency distribution :

Monthly expenditure (in Rs.)	0- 175	175-350	350-525	525-700	700-875	875-1050	1050-1125
Number of families	10	14	15	x	28	7	5

How many families spend between Rs 525- Rs 700 on milk ?

- A. 21
- B. 38
- C. 17
- D. 29

Answer: A



[View Text Solution](#)

101. Amul, is an Indian dairy cooperative society, based at Anand in the Gujarat. Formed in 1946, it is a cooperative brand managed by a cooperative body, the Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF), which today is jointly owned by 36 lakh (3.6 million) milk producers in Gujarat. Amul spurred India's White Revolution, which made the country the world's largest producer of milk and milk products



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Number of families	10	14	15	x	28	7	5

What is the upper limit of median class ?

- A. 1225
- B. 875
- C. 1050
- D. 700

Answer: D

[View Text Solution](#)

102. Amul, is an Indian dairy cooperative society, based at Anand in the Gujarat. Formed in 1946, it is a cooperative brand managed by a cooperative body, the Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF), which today is jointly owned by 36 lakh (3.6 million) milk producers in Gujarat. Amul spurred India's White Revolution, which made the country the world's largest producer of milk and milk products



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Monthly expenditure (in Ra.)	0- 175	175-350	350-525	525-700	700-875	875-1050	1050-1125
Number of families	10	14	15	x	28	7	5

What is the median expenditure on milk?

- A. 601.4
- B. 636.5
- C. 616.6
- D. 624.5

Answer: D



[View Text Solution](#)

103. Amul, is an Indian dairy cooperative society, based at Anand in the Gujarat. Formed in 1946, it is a cooperative brand managed by a cooperative body, the Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF), which today is jointly owned by 36 lakh (3.6 million) milk

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Monthly expenditure (in Ra.)	0- 175	175-350	350-525	525-700	700-875	875-1050	1050-1125
Number of families	10	14	15	x	28	7	5

What is the lower limit of model class ?

A. 1225

B. 875

C. 1050

Answer: D

[View Text Solution](#)

104. Amul, is an Indian dairy cooperative society, based at Anand in the Gujarat. Formed in 1946, it is a cooperative brand managed by a cooperative body, the Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF), which today is jointly owned by 36 lakh (3.6 million) milk producers in Gujarat. Amul spurred India's White Revolution, which made the country the world's largest producer of milk and milk products



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Monthly expenditure (in Ra.)	0- 175	175-350	350-525	525-700	700-875	875-1050	1050-1125
Number of families	10	14	15	x	28	7	5

What is the modal expenditure on milk?

- A. 734.25
- B. 743.74
- C. 801.25
- D. 820.25

Answer: A



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105. Cards on which numbers 1, 2, 3 100 are written (one number on one card and no number is repeated), put in a bag and are mixed thoroughly. A card is drawn at random from the bag. Find the probability

that card taken out has

What is the probability that card taken out has a odd number ?

A. 0.25

B. 0.49

C. 0.50

D. 0.51

Answer: C



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106. Cards on which numbers 1, 2, 3 100 are written (one number on one card and no number is repeated), put in a bag and are mixed thoroughly. A card is drawn at random from the bag. Find the probability that card taken out has

What is the probability that card taken out has a two digit odd number ?

A. 0.23

B. 0.45

C. 0.56

D. 0.34

Answer: B



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107. Cards on which numbers 1, 2, 3 100 are written (one number on one card and no number is repeated), put in a bag and are mixed thoroughly. A card is drawn at random from the bag. Find the probability that card taken out has

What is the probability that card taken out has a odd number which is multiple of 11?

A. 0.05

B. 0.1

C. 0.12

D. 0.06

Answer: A

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108. Cards on which numbers 1, 2, 3 100 are written (one number on one card and no number is repeated), put in a bag and are mixed thoroughly. A card is drawn at random from the bag. Find the probability that card taken out has

What is the probability that card taken out has an odd number which is not less than 70 ?

A. 0.13

B. 0.14

C. 0.12

D. 0.15

Answer: D



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109. Cards on which numbers 1, 2, 3 100 are written (one number on one card and no number is repeated), put in a bag and are mixed thoroughly. A card is drawn at random from the bag. Find the probability that card taken out has

What is the probability that card taken out has an odd number which is not multiple of 11 ?

A. 0.25

B. 0.50

C. 0.40

D. 0.45

Answer: D



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110. In two dice game, the player take turns to roll both dice, they can roll as many times as they want in one turn. A player scores the sum of the two dice thrown and gradually reaches a higher score as they continue to roll. If a single number 1 is thrown on either die, the score for that whole turn is lost. Two dice are thrown simultaneously.



What is the probability of getting the sum as an even number ?

A. $\frac{3}{4}$

B. $\frac{1}{2}$

C. $\frac{1}{4}$

D. $\frac{5}{8}$

Answer: D



[View Text Solution](#)

111. In two dice game, the player take turns to roll both dice, they can roll as many times as they want in one turn. A player scores the sum of the two dice thrown and gradually reaches a higher score as they continue to roll. If a single number 1 is thrown on either die, the score for that whole turn is lost. Two dice are thrown simultaneously.



What is the probability of getting the sum as a prime number ?

A. $\frac{5}{12}$

B. $\frac{1}{6}$

C. $\frac{7}{12}$

D. $\frac{11}{12}$

Answer: A



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112. In two dice game, the player take turns to roll both dice, they can roll as many times as they want in one turn. A player scores the sum of the two dice thrown and gradually reaches a higher score as they continue to roll. If a single number 1 is thrown on either die, the score for that whole turn is lost. Two dice are thrown simultaneously.



What is the probability of getting the sum of atleast 10?

- A. $\frac{5}{12}$
- B. $\frac{5}{6}$
- C. $\frac{1}{6}$

D. $\frac{7}{12}$

Answer: C



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113. In two dice game, the player take turns to roll both dice, they can roll as many times as they want in one turn. A player scores the sum of the two dice thrown and gradually reaches a higher score as they continue to roll. If a single number 1 is thrown on either die, the score for that whole turn is lost. Two dice are thrown simultaneously.



What is the probability of getting a doublet of even number ?

A. $\frac{1}{12}$

B. $\frac{5}{12}$

C. $\frac{11}{12}$

D. $\frac{7}{12}$

Answer: C



View Text Solution

114. In two dice game, the player take turns to roll both dice, they can roll as many times as they want in one turn. A player scores the sum of the two dice thrown and gradually reaches a higher score as they continue to roll. If a single number 1 is thrown on either die, the score for that whole turn is lost. Two dice are thrown simultaneously.



What is the probability of getting a product of numbers greater than 16?

A. $\frac{7}{36}$

B. $\frac{2}{9}$

C. $\frac{1}{4}$

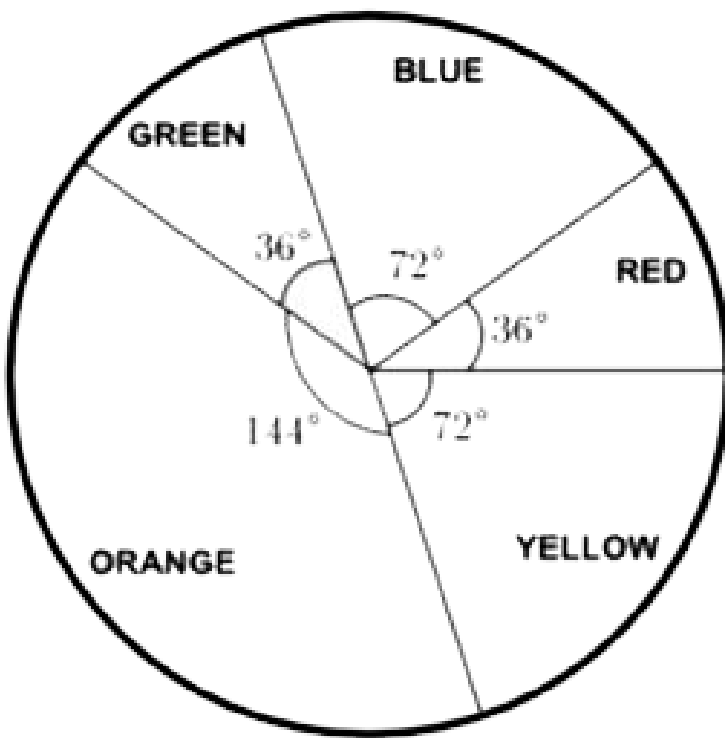
D. $\frac{11}{36}$

Answer: C



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115. A survey was taken at a high school, and the results were put in a circle graph. The students were asked to list their favourite colours. The measurement of each central angle is shown. If a person is chosen at random from the school, find the probability of each response.



What is the probability of favourite colour being red ?

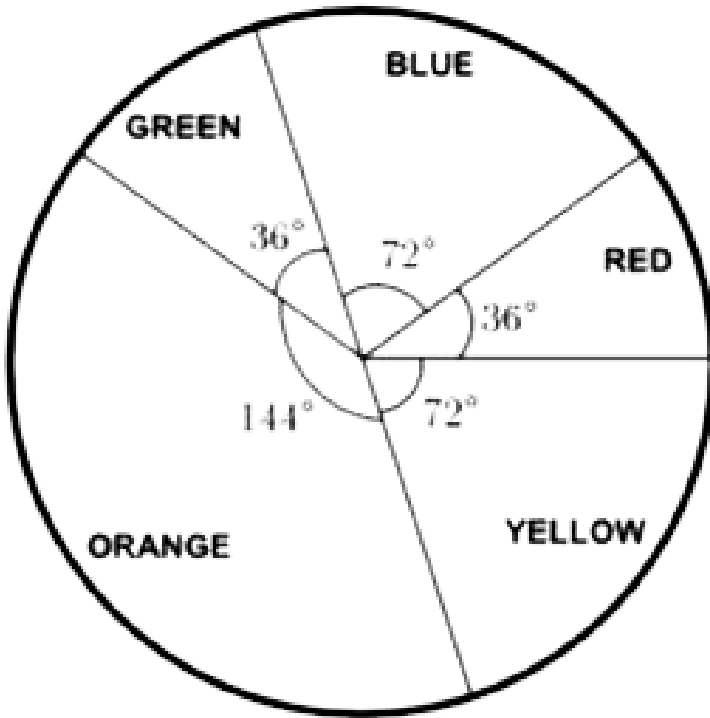
- A. 0.1
- B. 0.2
- C. 0.3
- D. 0.4

Answer: A



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116. A survey was taken at a high school, and the results were put in a circle graph. The students were asked to list their favourite colours. The measurement of each central angle is shown. If a person is chosen at random from the school, find the probability of each response.



What is the probability of favourite colour being blue or green ?

A. 0.1

B. 0.2

C. 0.3

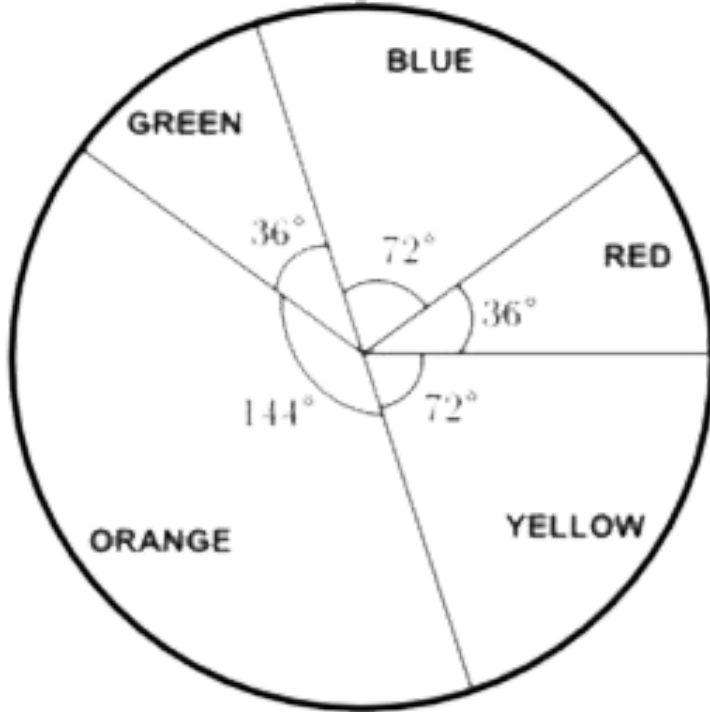
D. 0.4

Answer: C



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117. A survey was taken at a high school, and the results were put in a circle graph. The students were asked to list their favourite colours. The measurement of each central angle is shown. If a person is chosen at random from the school, find the probability of each response.



What is the probability of favourite colour not being red or blue?

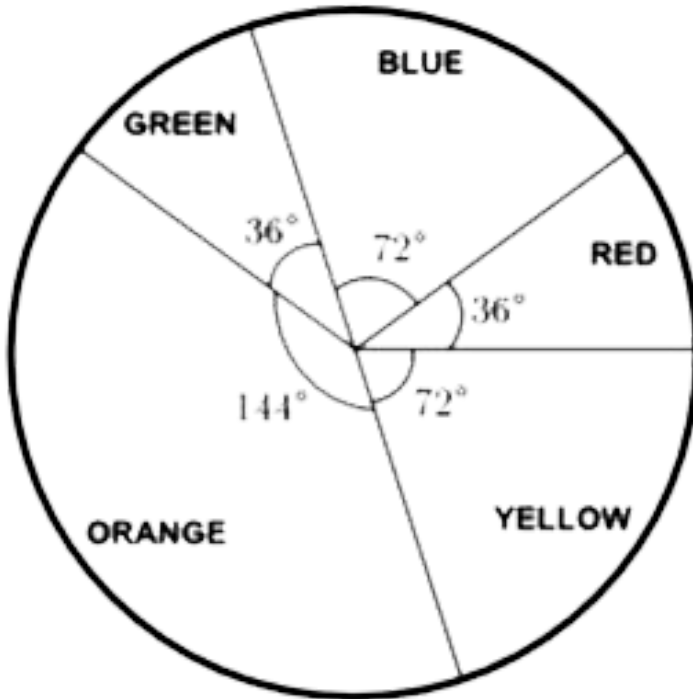
- A. 0.35
- B. 0.7
- C. 0.15
- D. 0.50

Answer: B



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118. A survey was taken at a high school, and the results were put in a circle graph. The students were asked to list their favourite colours. The measurement of each central angle is shown. If a person is chosen at random from the school, find the probability of each response.



What is the probability of favourite colour not being orange or green ?

- A. 0.65
- B. 0.75
- C. 0.25

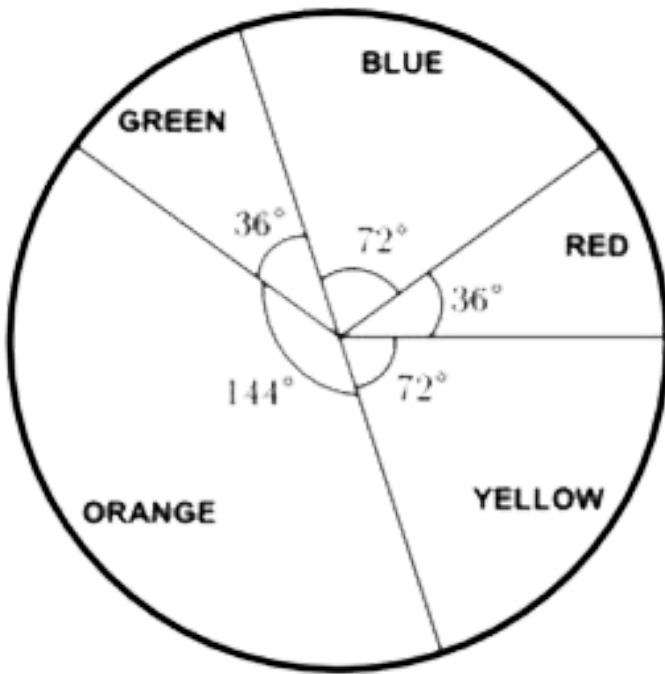
D. 0.50

Answer: D



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119. A survey was taken at a high school, and the results were put in a circle graph. The students were asked to list their favourite colours. The measurement of each central angle is shown. If a person is chosen at random from the school, find the probability of each response.



What is the probability of favourite colour being red or blue?

- A. 0.2
- B. 0.3
- C. 0.1
- D. 0.4

Answer: B



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120. Jawaharlal Nehru Stadium is a multi-purpose sports stadium and a very popular sports stadium of Delhi. It has a capacity to seat 60,000 people. It is the third largest multi-purpose stadium in India and owned by the Indian Olympic Association. In 2010, the Jawaharlal Nehru Stadium was the main stadium for XIX Commonwealth Games, a major sporting



Jawaharlal Nehru Stadium is conducting the annual sports competition soon. The curator of the stadium is tasked to figuring out the dimensions for carving out some areas allotted for a hockey court and a shooting range, as shown in the figure below.

B. 22, 000 m²

C. 20, 000 m²

D. 16, 880 m²

Answer: C

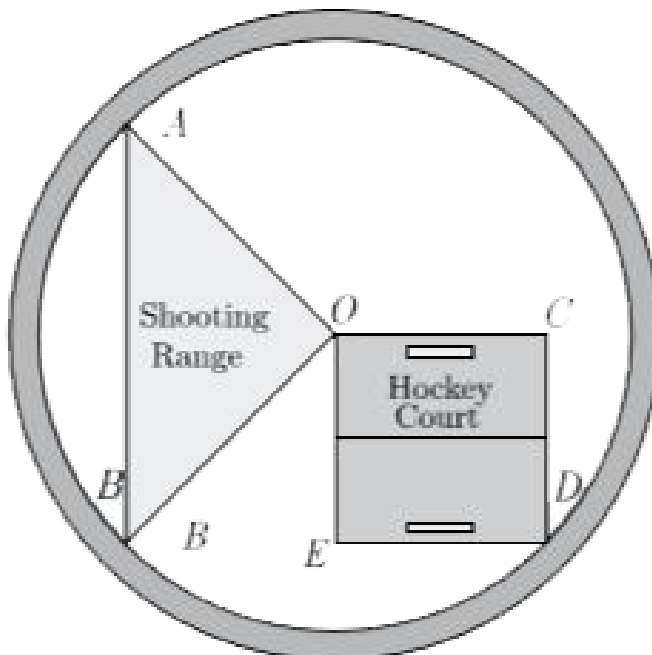


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121. Jawaharlal Nehru Stadium is a multi-purpose sports stadium and a very popular sports stadium of Delhi. It has a capacity to seat 60,000 people. It is the third largest multi-purpose stadium in India and owned by the Indian Olympic Association. In 2010, the Jawaharlal Nehru Stadium was the main stadium for XIX Commonwealth Games, a major sporting



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The shapes of the hockey court and the shooting range are square and triangle respectively. Both of the courts have a common edge that touches the centre of stadium. The construction of the shooting range is such that the angle to centre is 90° . The radius of the stadium is 180 metres.

On the basis of the above information, answer any four of the following questions:

What is the area allotted to hockey court ?

A. $12,600 \text{ m}^2$

B. $22,000 \text{ m}^2$

C. $20,000 \text{ m}^2$

D. $16,880 \text{ m}^2$

Answer: C



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such that the angle to centre is 90° . The radius of the stadium is 180 metres.

On the basis of the above information, answer any four of the following questions:

If the team of the curators managing the stadium, likes to allot space for some more sports, how much area is available to them?

A. 85, 600 m^2

B. 95, 800 m^2

C. 60, 040 m^2

D. 76, 980 m^2

Answer: A



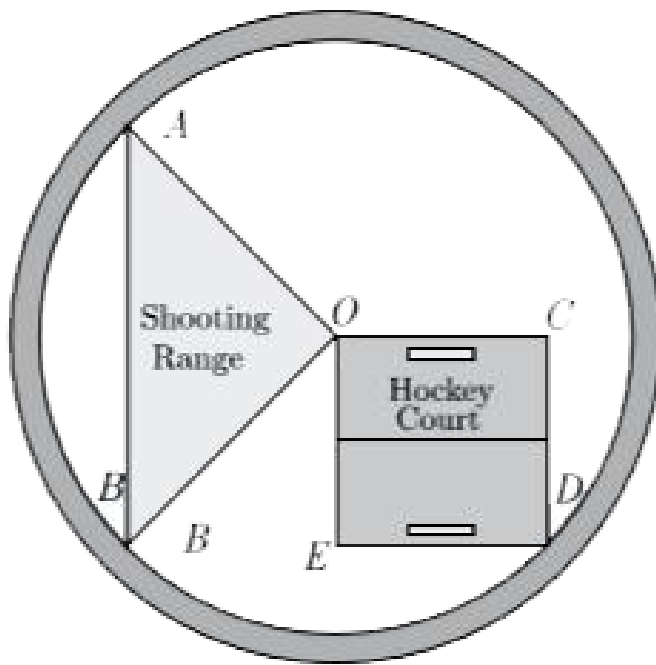
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The shapes of the hockey court and the shooting range are square and triangle respectively. Both of the courts have a common edge that touches the centre of stadium. The construction of the shooting range is such that the angle to centre is 90° . The radius of the stadium is 180 metres.

On the basis of the above information, answer any four of the following questions:

If the boundaries of the hockey court and shooting range are to be fenced, then what is the required length of the fence ?

A. $200(2 + 5\sqrt{3})m$

B. $200(2 + 3\sqrt{2})m$

C. $200(2 + 5\sqrt{2})m$

D. $200(2 + 3\sqrt{3})m$

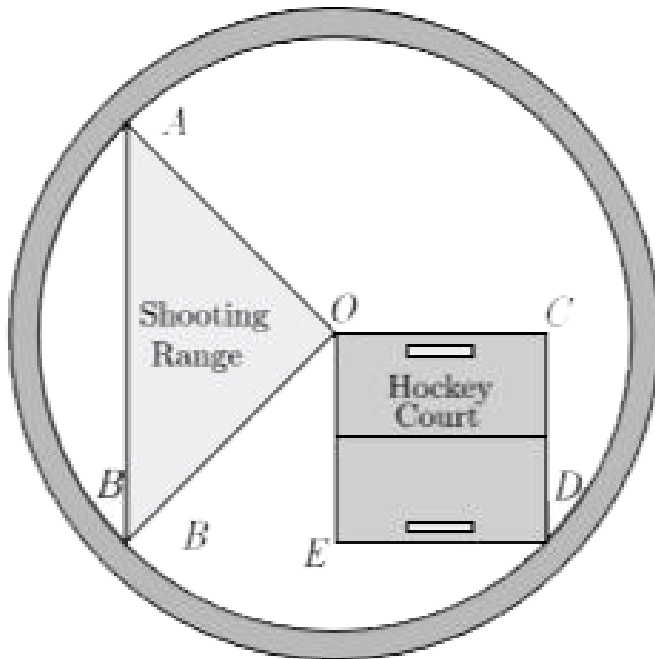
Answer: B

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124. Jawaharlal Nehru Stadium is a multi-purpose sports stadium and a very popular sports stadium of Delhi. It has a capacity to seat 60,000 people. It is the third largest multi-purpose stadium in India and owned by the Indian Olympic Association. In 2010, the Jawaharlal Nehru Stadium was the main stadium for XIX Commonwealth Games, a major sporting



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The shapes of the hockey court and the shooting range are square and triangle respectively. Both of the courts have a common edge that touches the centre of stadium. The construction of the shooting range is such that the angle to centre is 90° . The radius of the stadium is 180 metres.

On the basis of the above information, answer any four of the following questions:

If the cost of fencing is Rs 6 per metre, what is the total cost of fencing ?

A. Rs $2400(2 + 3\sqrt{2})$

B. Rs $1200(2 + 5\sqrt{2})$

C. Rs $1200(2 + 3\sqrt{2})$

D. Rs $2400(2 + 3\sqrt{2})$

Answer: C



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125. Due to ongoing Corona viruse outbreak, Raj Medical store has started selling masks of decent quality. The store is selling two types of masks currently type A and type B . The cost of one type A mask is Rs. 15 and of one type B mask is Rs. 20. In the month of April, 2020, the store sold 100 masks for total sales of Rs. 1650.



Due to great demand and short supply, the store has increased the price of each type by Rs. 5 from May 1, 2020. In the month of May, 2020, the store sold 310 masks for total sales of Rs. 6875.



On the basis of the above information, answer any four of the following questions:

How many masks of each type were sold in the month of April?

- A. 40 masks of type A, and 60 masks of type B
- B. 60 masks of type A, and 40 masks of type B
- C. 70 masks of type A, and 30 masks of type B
- D. 30 masks of type A, and 70 masks of type B

Answer: C



[View Text Solution](#)

126. Due to ongoing Corona viruse outbreak, Raj Medical store has started selling masks of decent quality. The store is selling two types of masks currently type A and type B . The cost of one type A mask is Rs. 15 and of one type B mask is Rs. 20. In the month of April, 2020, the store sold 100 masks for total sales of Rs. 1650.



Due to great demand and short supply, the store has increased the price of each type by Rs. 5 from May 1, 2020. In the month of May, 2020, the store sold 310 masks for total sales of Rs. 6875.



On the basis of the above information, answer any four of the following questions:

If the store had sold 50 masks of each type, what would be its sales in the month of April?

A. Rs 550

B. Rs 560

C. Rs 1050

D. Rs 1750

Answer: D



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127. Due to ongoing Corona viruse outbreak, Raj Medical store has started selling masks of decent quality. The store is selling two types of masks currently type A and type B . The cost of one type A mask is Rs. 15 and of one type B mask is Rs. 20. In the month of April, 2020, the store sold 100 masks for total sales of Rs. 1650.



Due to great demand and short supply, the store has increased the price of each type by Rs. 5 from May 1, 2020. In the month of May, 2020, the store sold 310 masks for total sales of Rs. 6875.



On the basis of the above information, answer any four of the following questions:

How many masks of each type were sold in the month of May?

A. 175 masks of type A, and 135 masks of type B

B. 200 masks of type A, and 110 masks of type B

C. 110 masks of type A, and 200 masks of type B

D. 135 masks of type A, and 175 masks of type B

Answer: A



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128. Due to ongoing Corona viruse outbreak, Raj Medical store has started selling masks of decent quality. The store is selling two types of masks currently type A and type B . The cost of one type A mask is Rs. 15 and of one type B mask is Rs. 20. In the month of April, 2020, the store sold 100 masks for total sales of Rs. 1650.



Due to great demand and short supply, the store has increased the price of each type by Rs. 5 from May 1, 2020. In the month of May, 2020, the store sold 310 masks for total sales of Rs. 6875.



On the basis of the above information, answer any four of the following questions:

What percent of masks of each type sale was increased in the month of May, compared with the sale of month April?

A. 110 % in type A and 180 % in type B

B. 110 % in type A and 180 % in type B

C. 350 % in type A and 150 % in type B

D. 150 % in type A and 350 % in type B

Answer: D



[View Text Solution](#)

129. Due to ongoing Corona viruse outbreak, Raj Medical store has started selling masks of decent quality. The store is selling two types of masks currently type A and type B . The cost of one type A mask is Rs. 15 and of one type B mask is Rs. 20. In the month of April, 2020, the store sold 100 masks for total sales of Rs. 1650.



Due to great demand and short supply, the store has increased the price of each type by Rs. 5 from May 1, 2020. In the month of May, 2020, the store sold 310 masks for total sales of Rs. 6875.



On the basis of the above information, answer any four of the following questions:

What extra profit did he earned by increasing price in May month.

A. Rs 1550

B. Rs 3100

C. Rs 1650

D. Rs 1825

Answer: A



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130. A game at a stall in new year carnival involves spinning a wheel first as a first step to complete the game with certain rules. If the wheel stops at a particular number, then the player is allowed to roll a 6 faced unbiased dice.



Rules of Game:

1. If the wheel stops at a particular number, then the player is allowed to roll a unbiased dice.
2. If the wheel stops at any other number, player get to try again and only one extra try allowed.

If player reach the next stage and roll a dice, he may get a prize depending on the number on dice.

On the basis of the above information, answer any four of the following

questions :

What is the probability of getting an even number on the wheel ?

A. $\frac{1}{4}$

B. $\frac{1}{2}$

C. $\frac{1}{8}$

D. $\frac{1}{16}$

Answer: B



[View Text Solution](#)

131. A game at a stall in new year carnival involves spinning a wheel first as a first step to complete the game with certain rules. If the wheel stops at a particular number, then the player is allowed to roll a 6 faced unbiased dice.



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2. If the wheel stops at any other number, player get to try again and only one extra try allowed.

If player reach the next stage and roll a dice, he may get a prize depending on the number on dice.

On the basis of the above information, answer any four of the following

questions :

If getting an odd number on the wheel allows a player to roll the die, then what is the probability of his rolling the die ?

A. $\frac{1}{4}$

B. $\frac{1}{2}$

C. $\frac{1}{8}$

D. $\frac{1}{16}$

Answer: B



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132. A game at a stall in new year carnival involves spinning a wheel first as a first step to complete the game with certain rules. If the wheel stops at a particular number, then the player is allowed to roll a 6 faced unbiased dice.



Rules of Game:

1. If the wheel stops at a particular number, then the player is allowed to roll a unbiased dice.
2. If the wheel stops at any other number, player get to try again and only one extra try allowed.

If player reach the next stage and roll a dice, he may get a prize depending on the number on dice.

On the basis of the above information, answer any four of the following questions :

If the player is allowed to roll the die and getting a number greater than 4 entitles him to get prize, then the probability of his winning the prize is

A. $\frac{3}{4}$

B. $\frac{1}{6}$

C. $\frac{1}{3}$

D. $\frac{2}{3}$

Answer: C



[View Text Solution](#)

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Rules of Game:

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If player reach the next stage and roll a dice, he may get a prize depending on the number on dice.

On the basis of the above information, answer any four of the following questions :

If getting a square number on the wheel allows a player to roll the die, then what is the probability of his rolling the die ?

A. $\frac{1}{4}$

B. $\frac{1}{2}$

C. $\frac{1}{3}$

D. $\frac{2}{3}$

Answer: A



[View Text Solution](#)

134. A game at a stall in new year carnival involves spinning a wheel first as a first step to complete the game with certain rules. If the wheel stops at a particular number, then the player is allowed to roll a 6 faced unbiased dice.



Rules of Game:

1. If the wheel stops at a particular number, then the player is allowed to roll a unbiased dice.
2. If the wheel stops at any other number, player get to try again and only one extra try allowed.

If player reach the next stage and roll a dice, he may get a prize depending on the number on dice.

On the basis of the above information, answer any four of the following questions :

If the player is allowed to roll the die and getting a prime number on die entitles him to get prize, then what is the probability of his winning the prize ?

A. $\frac{1}{4}$

B. $\frac{1}{2}$

C. $\frac{1}{3}$

D. $\frac{1}{6}$

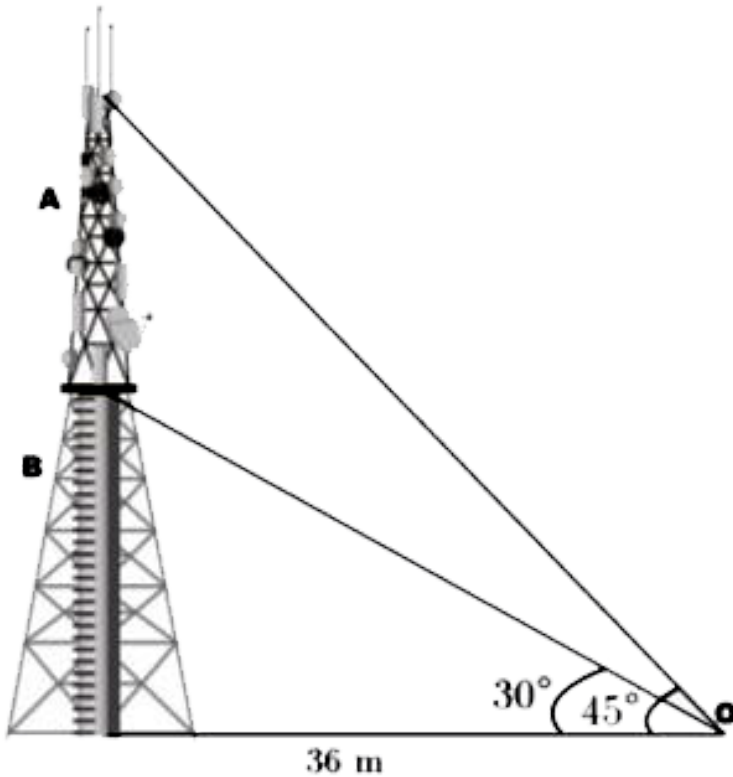
Answer: B



[View Text Solution](#)

135. Radio towers are used for transmitting a range of communication services including radio and television. The tower will either act as an antenna itself or support one or more antennas on its structure, including microwave dishes. They are among the tallest human-made structures. There are 2 main types: guyed and self-supporting structures. On a similar concept, a radio station tower was built in two sections A

and B. Tower is supported by wires from a point O . Distance between the base of the tower and point O is 36 m. From point O , the angle of elevation of the top of section B is 30° and the angle of elevation of the top of section A is 45° .



On the basis of the above information, answer any four of the following questions :

What is the height of the section B ?

A. $12\sqrt{3}$ m

B. $12\sqrt{2}m$

C. $8\sqrt{3}m$

D. $4\sqrt{2}m$

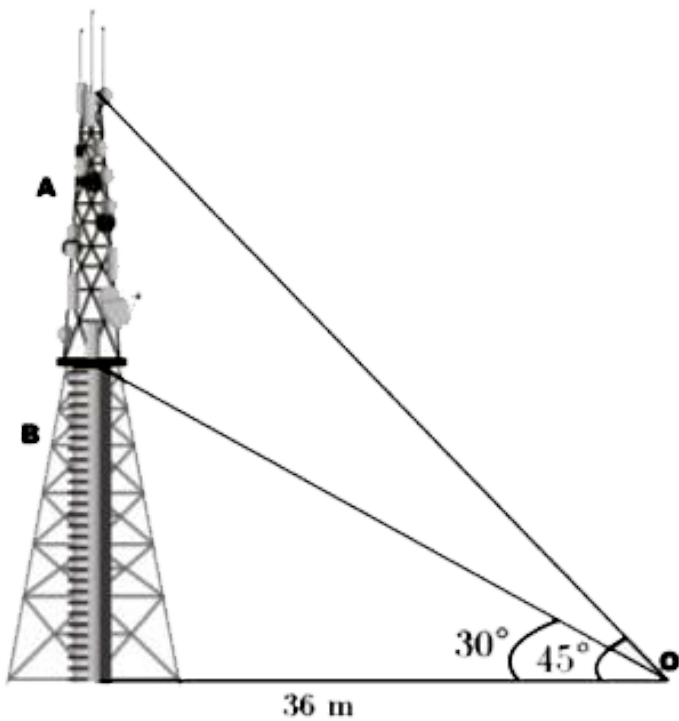
Answer: A



[View Text Solution](#)

136. Radio towers are used for transmitting a range of communication services including radio and television. The tower will either act as an antenna itself or support one or more antennas on its structure, including microwave dishes. They are among the tallest human-made structures. There are 2 main types: guyed and self-supporting structures.

On a similar concept, a radio station tower was built in two sections A and B. Tower is supported by wires from a point O . Distance between the base of the tower and point O is 36 m. From point O , the angle of elevation of the top of section B is 30° and the angle of elevation of the top of section A is 45° .



On the basis of the above information, answer any four of the following questions :

What is the height of the section A ?

A. $12(2 - \sqrt{2})$

B. $24(2 - \sqrt{2})$

C. $12(3 - \sqrt{3})$

D. $24(3 - \sqrt{3})$

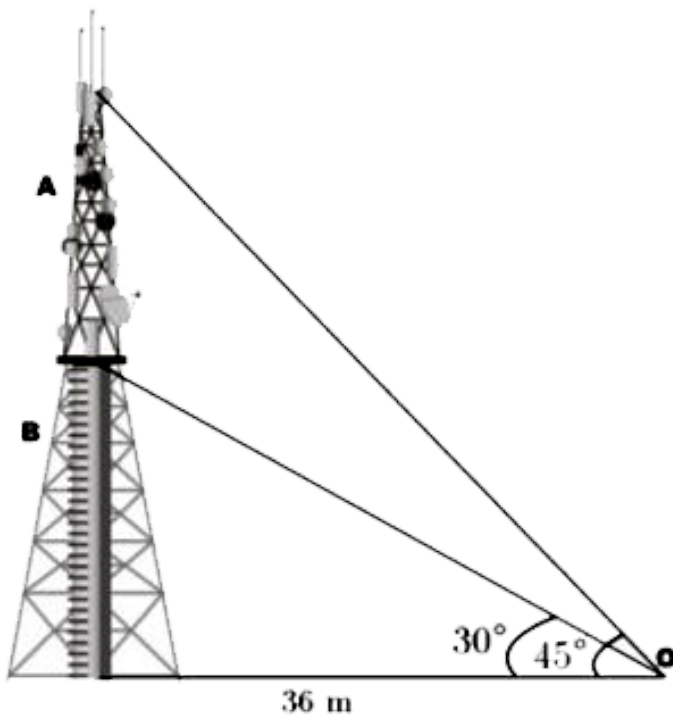
Answer: C



View Text Solution

137. Radio towers are used for transmitting a range of communication services including radio and television. The tower will either act as an antenna itself or support one or more antennas on its structure, including microwave dishes. They are among the tallest human-made structures. There are 2 main types: guyed and self-supporting structures.

On a similar concept, a radio station tower was built in two sections A and B. Tower is supported by wires from a point O . Distance between the base of the tower and point O is 36 m. From point O , the angle of elevation of the top of section B is 30° and the angle of elevation of the top of section A is 45° .



On the basis of the above information, answer any four of the following questions :

What is the length of the wire astructure from the poitn O to top of aection A ?

- A. $32\sqrt{2}$ m
- B. $24\sqrt{3}m$
- C. $28\sqrt{3}m$
- D. $36\sqrt{2}m$

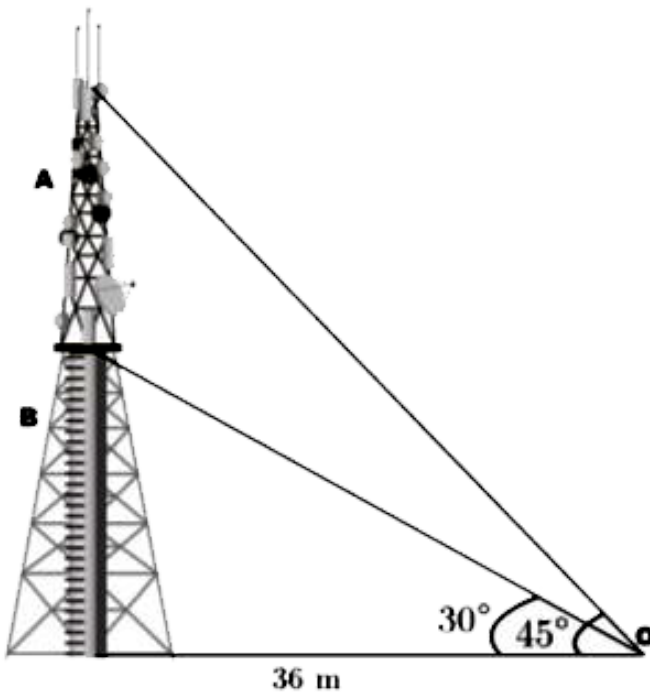
Answer: D



View Text Solution

138. Radio towers are used for transmitting a range of communication services including radio and television. The tower will either act as an antenna itself or support one or more antennas on its structure, including microwave dishes. They are among the tallest human-made structures. There are 2 main types: guyed and self-supporting structures.

On a similar concept, a radio station tower was built in two sections A and B. Tower is supported by wires from a point O . Distance between the base of the tower and point O is 36 m. From point O , the angle of elevation of the top of section B is 30° and the angle of elevation of the top of section A is 45° .



On the basis of the above information, answer any four of the following questions :

What is the length of the wire structure from the point O to the top of section B ?

- A. $12\sqrt{3}m$
- B. $24\sqrt{3}m$
- C. $28\sqrt{3}m$
- D. $16\sqrt{3}m$

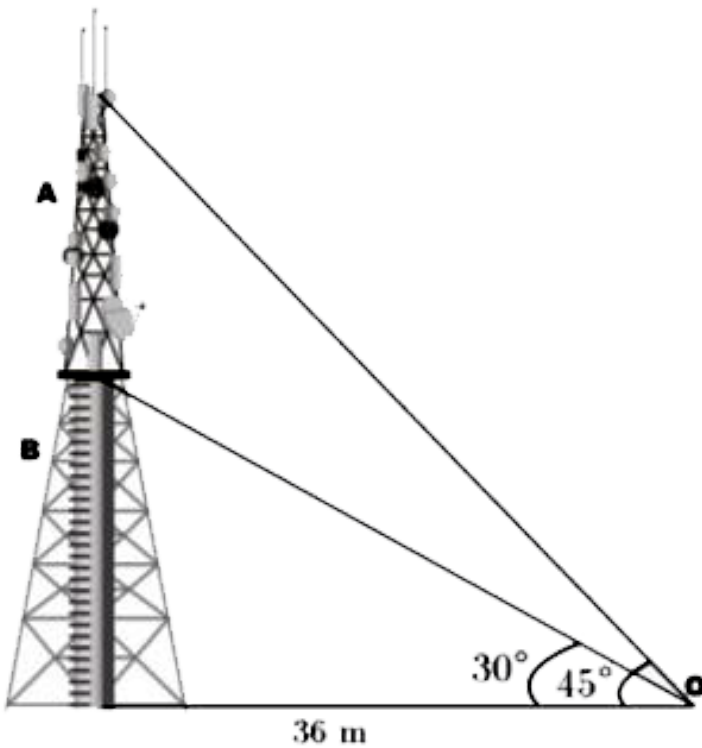
Answer: B



[View Text Solution](#)

139. Radio towers are used for transmitting a range of communication services including radio and television. The tower will either act as an antenna itself or support one or more antennas on its structure, including microwave dishes. They are among the tallest human-made structures. There are 2 main types: guyed and self-supporting structures.

On a similar concept, a radio station tower was built in two sections A and B. Tower is supported by wires from a point O . Distance between the base of the tower and point O is 36 m. From point O , the angle of elevation of the top of section B is 30° and the angle of elevation of the top of section A is 45° .



On the basis of the above information, answer any four of the following questions :

What is the angle of depreaaion from top of tower to point O ?

- A. 30°
- B. 45°
- C. 15°
- D. 75°

Answer: B

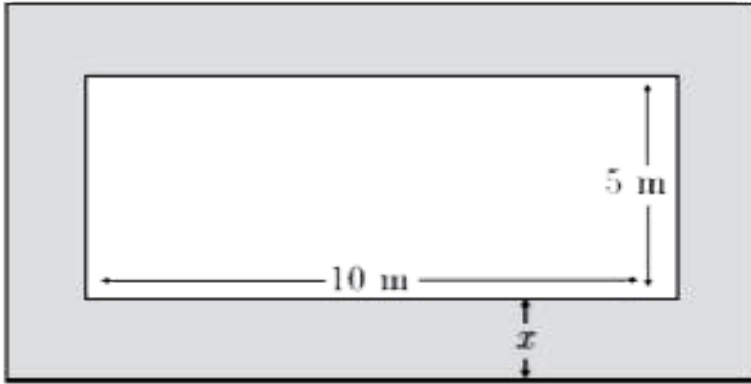
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140. RK Fabricators has got a order for making a frame for machine of their client. For which, they are using a Au to CAD software to create a constructible model that includes the relevant information such as dimensions of the frame and materials needed.



The frame will have a solid base and will be cut out of a piece of steel The final area of the frame should be 54 sq m. The digram of frame is shown

below.



In order to input the right values in the AutoCAD software, the engineer needs to calculate some basic things. On the basis of the above information, answer any four of the following questions:

What are the dimensions of the outer frame ?

- A. $(10 + x)$ and $(5 + x)$
- B. $(10 - x)$ and $(5 - x)$
- C. $(10 + 2x)$ and $(5 + 2x)$
- D. $(10 - 2x)$ and $(5 - 2x)$

Answer: C

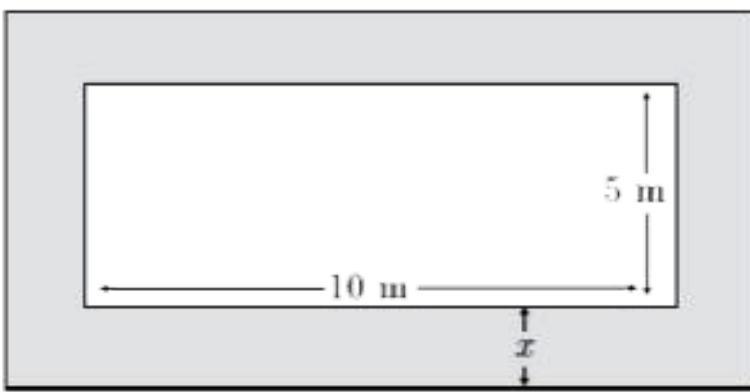


[View Text Solution](#)

141. RK Fabricators has got a order for making a frame for machine of their client. For which, they are using a Au to CAD software to create a constructible model that includes the relevant information such as dimensions of the frame and materials needed.



The frame will have a solid base and will be cut out of a piece of steel The final area of the frame should be 54 sq m. The digram of frame is shown below.



In order to input the right values in the AutoCAD software, the engineer needs to calculate some basic things. On the basis of the above information, answer any four of the following questions:

A metal sheet of minimum area is used to make the frame. What should be the minimum area of metal sheet before cutting ?

A. $4x^2 + 30x + 50$

B. $x^2 + 27x + 55$

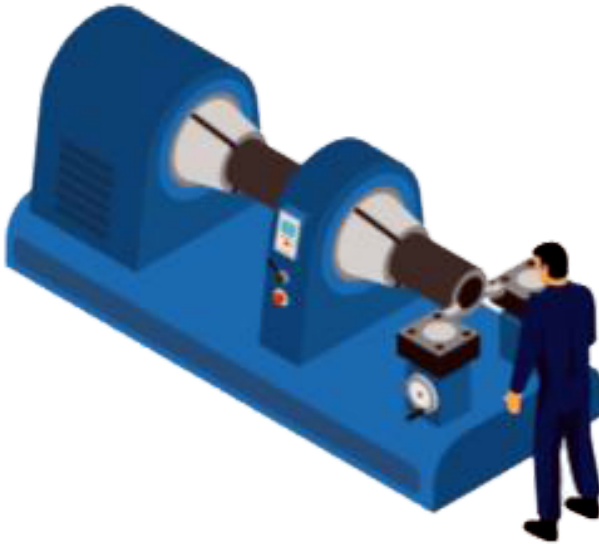
C. $5x^2 + 30$

D. $4x^2 + 50$

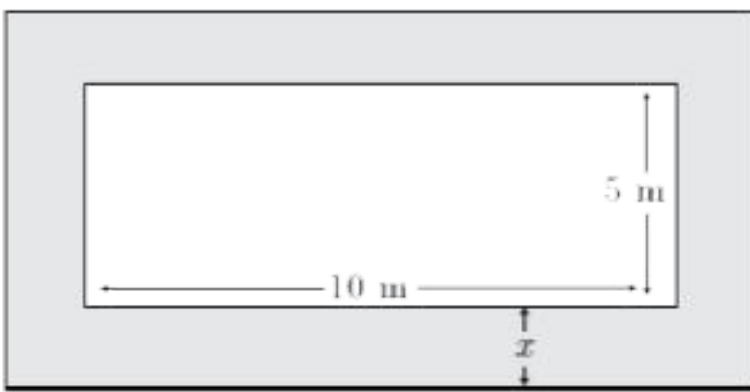
Answer: A

 [View Text Solution](#)

142. RK Fabricators has got a order for making a frame for machine of their client. For which, they are using a Au to CAD software to create a constructible model that includes the relevant information such as dimensions of the frame and materials needed.



The frame will have a solid base and will be cut out of a piece of steel The final area of the frame should be 54 sq m. The digram of frame is shown below.



In order to input the right values in the AutoCAD software, the engineer needs to calculate some basic things. On the basis of the above information, answer any four of the following questions:

What is the area of required final metal frame ?

A. $4x^2 + 30x + 50m^2$

B. $x^2 + 27x + 55m^2$

C. $4x^2 + 50xm^2$

D. $4x^2 + 30m^2$

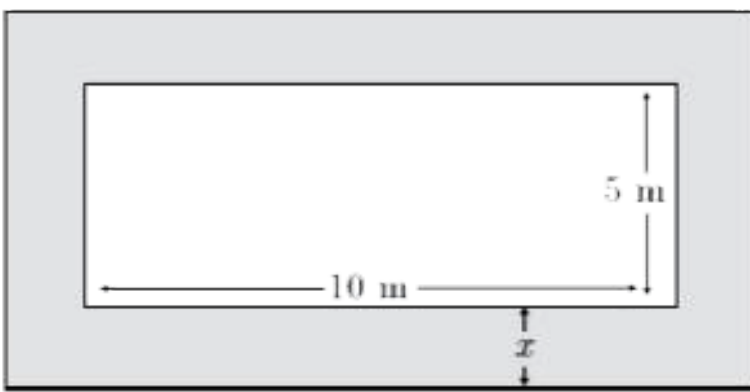
Answer: D

 [View Text Solution](#)

143. RK Fabricators has got a order for making a frame for machine of their client. For which, they are using a Au to CAD software to create a constructible model that includes the relevant information such as dimensions of the frame and materials needed.



The frame will have a solid base and will be cut out of a piece of steel The final area of the frame should be 54 sq m. The digram of frame is shown below.



In order to input the right values in the AutoCAD software, the engineer needs to calculate some basic things. On the basis of the above information, answer any four of the following questions:

If the area of the frame is 54 sq m, what is the value of x ?

- A. 0.75m
- B. 3.0 m
- C. 1.5 m
- D. 1.8 m

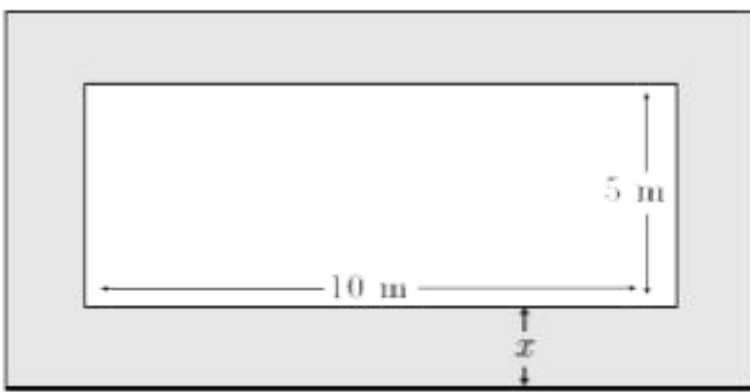
Answer: C

 [View Text Solution](#)

144. RK Fabricators has got a order for making a frame for machine of their client. For which, they are using a Au to CAD software to create a constructible model that includes the relevant information such as dimensions of the frame and materials needed.



The frame will have a solid base and will be cut out of a piece of steel The final area of the frame should be 54 sq m. The digram of frame is shown below.



In order to input the right values in the AutoCAD software, the engineer needs to calculate some basic things. On the basis of the above information, answer any four of the following questions:

What is the perimeter of the frame ?

- A. 36 m
- B. 42 m
- C. 45 m
- D. 39 m

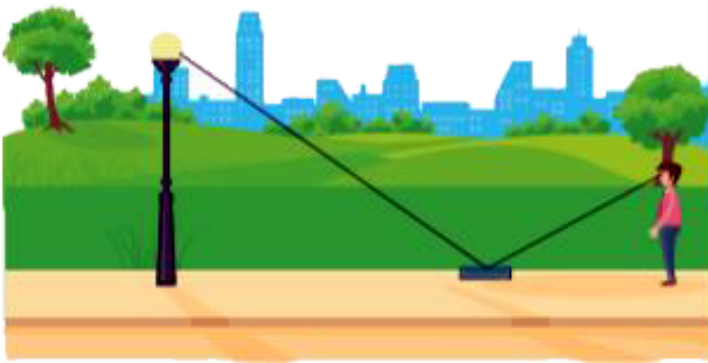
Answer: B

 [View Text Solution](#)

145. The law of reflection states that when a ray of light reflects off a surface, the angle of incidence is equal to the angle of reflection.



Ramesh places a mirror on level ground to determine the height of a pole (with traffic light fired on it). He stands at a certain distance so that he can see the top of the pole reflected from the mirror. Ramesh's eye level is 1.5 m above the ground. The distance of Ramesh and the pole from the mirror are 1.8 m and 6 m respectively.



On the basis of the above information, answer any four of the following

questions :

Which criterion of similarity is applicable to similar triangles ?

A. SSA

B. ASA

C. SSS

D. AA

Answer: D

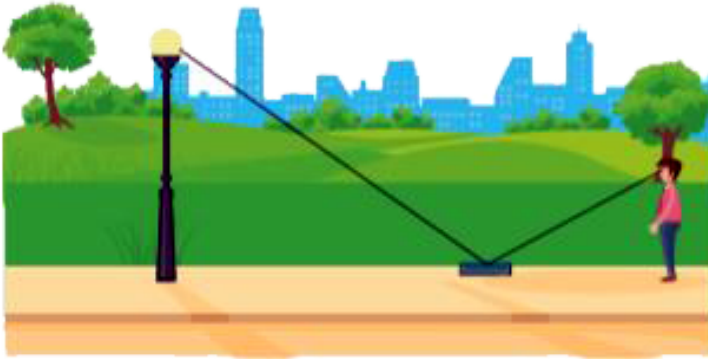


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146. The law of reflection states that when a ray of light reflects off a surface, the angle of incidence is equal to the angle of reflection.



Ramesh places a mirror on level ground to determine the height of a pole (with traffic light fixed on it). He stands at a certain distance so that he can see the top of the pole reflected from the mirror. Ramesh's eye level is 1.5 m above the ground. The distance of Ramesh and the pole from the mirror are 1.8 m and 6 m respectively.



On the basis of the above information, answer any four of the following questions :

What is the height of the pole ?

- A. 6 metres
- B. 8 metres
- C. 5 metres
- D. 4 metres

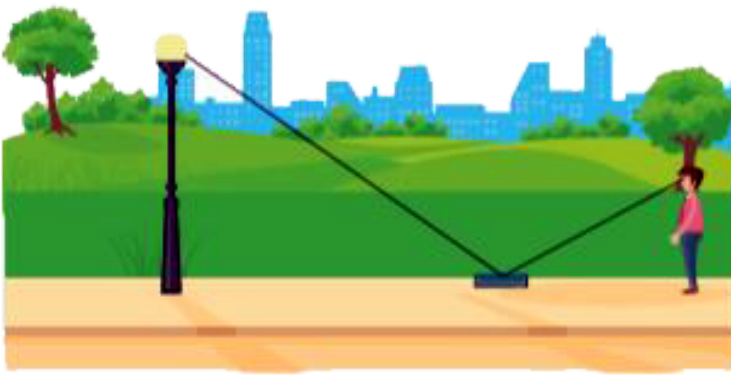
Answer: C

 [View Text Solution](#)

147. The law of reflection states that when a ray of light reflects off a surface, the angle of incidence is equal to the angle of reflection.



Ramesh places a mirror on level ground to determine the height of a pole (with traffic light fixed on it). He stands at a certain distance so that he can see the top of the pole reflected from the mirror. Ramesh's eye level is 1.5 m above the ground. The distance of Ramesh and the pole from the mirror are 1.8 m and 6 m respectively.



On the basis of the above information, answer any four of the following questions :

If angle of incidence is i , which of the following is correct relation?

A. $\tan i = \frac{5}{6}$

B. $\tan i = \frac{6}{5}$

C. $\tan i = \frac{3}{5}$

D. $\tan i = \frac{5}{3}$

Answer: B

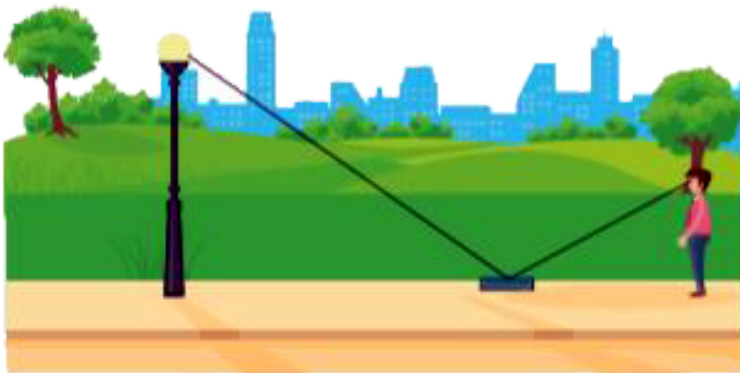


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148. The law of reflection states that when a ray of light reflects off a surface, the angle of incidence is equal to the angle of reflection.



Ramesh places a mirror on level ground to determine the height of a pole (with traffic light fired on it). He stands at a certain distance so that he can see the top of the pole reflected from the mirror. Ramesh's eye level is 1.5 m above the ground. The distance of Ramesh and the pole from the mirror are 1.8 m and 6 m respectively.



On the basis of the above information, answer any four of the following

questions :

Now Ramesh move behind such that distance between pole and Ramesh is 13 meters. He place mirror between him and pole to see the reflection of light in right position.

What is the distance between mirror and Ramesh ?

A. 7 metres

B. 3 metres

C. 5 metres

D. 4 metres

Answer: B

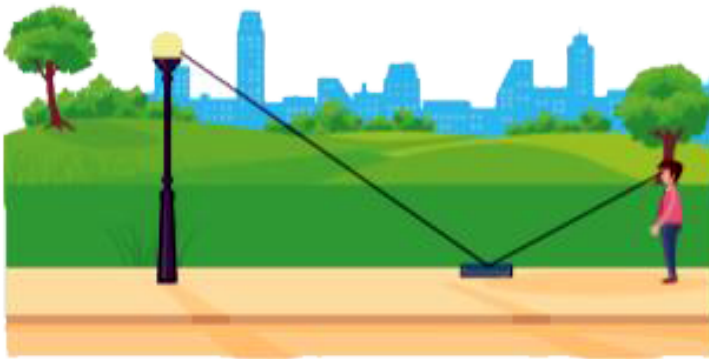


View Text Solution

149. The law of reflection states that when a ray of light reflects off a surface, the angle of incidence is equal to the angle of reflection.



Ramesh places a mirror on level ground to determine the height of a pole (with traffic light fired on it). He stands at a certain distance so that he can see the top of the pole reflected from the mirror. Ramesh's eye level is 1.5 m above the ground. The distance of Ramesh and the pole from the mirror are 1.8 m and 6 m respectively.



On the basis of the above information, answer any four of the following questions :

What is the distance between mirror and pole ?

A. 9 metres

B. 8 metres

C. 12 metres

D. 10 metres

Answer: D



[View Text Solution](#)

150. Five friends and one of their mother are having a picnic. The mother decide to play card game. 17 cards numbered 1, 2, 3 ... 17 are put in a box and mixed thoroughly. The mother asks each boy to draw a card and after each draw she shows some magic tricks based on card number.

1 2 3 4 5 6 7 8 9

10 11 12 13 14 15 16 17



On the basis of the above information, answer any four of the following questions:

What is the probability of drawing an odd number card in the first draw by the first boy ?

A. $\frac{8}{17}$

B. $\frac{9}{17}$

C. $\frac{10}{17}$

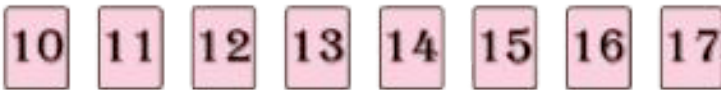
D. $\frac{11}{17}$

Answer: B



[View Text Solution](#)

151. Five friends and one of their mother are having a picnic. The mother decide to play card game. 17 cards numbered 1, 2, 3 ... 17 are put in a box and mixed thoroughly. The mother asks each boy to draw a card and after each draw she shows some magic tricks based on card number.



On the basis of the above information, answer any four of the following questions:

Now in second draw, card drawn in first draw is replaced. What is the probability of drawing a prime number card by the second boy?

A. $\frac{6}{17}$

B. $\frac{9}{17}$

C. $\frac{7}{17}$

D. $\frac{11}{17}$

Answer: C



[View Text Solution](#)

152. Five friends and one of their mother are having a picnic. The mother decide to play card game. 17 cards numbered 1, 2, 3 ... 17 are put in a box and mixed thoroughly. The mother asks each boy to draw a card and after each draw she shows some magic tricks based on card number.



On the basis of the above information, answer any four of the following

questions:

If in second draw, boy got number 2 and the card is not replaced, what is the probability of drawing a card bearing a multiple of 3 greater than 5 by the third boy?

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $\frac{2}{3}$

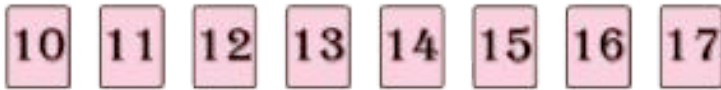
D. $\frac{5}{6}$

Answer: A



[View Text Solution](#)

153. Five friends and one of their mother are having a picnic. The mother decide to play card game. 17 cards numbered 1, 2, 3 ... 17 are put in a box and mixed thoroughly. The mother asks each boy to draw a card and after each draw she shows some magic tricks based on card number.



On the basis of the above information, answer any four of the following questions:

If the card is replaced after the third draw, what is the probability of drawing a card bearing a number greater than 17 by the fourth boy ?

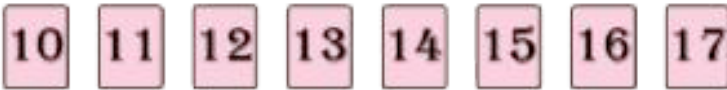
- A. 0.25
- B. 0.2
- C. 0
- D. 1

Answer: C



[View Text Solution](#)

154. Five friends and one of their mother are having a picnic. The mother decide to play card game. 17 cards numbered 1, 2, 3 ... 17 are put in a box and mixed thoroughly. The mother asks each boy to draw a card and after each draw she shows some magic tricks based on card number.



On the basis of the above information, answer any four of the following questions:

If the card is replaced after the fourth draw, what is the probability of drawing a card bearing a multiple of 3 or 7 by the fifth boy?:

A. $\frac{6}{16}$

B. $\frac{7}{16}$

C. $\frac{8}{17}$

D. $\frac{9}{17}$

Answer: B



View Text Solution

155. A road roller (sometimes called a roller-compactor, or just roller) is a compactor-type engineering vehicle used to compact soil, gravel, concrete, or asphalt in the construction of roads and foundations. Similar rollers are used also at landfills or in agriculture. Road rollers are frequently referred to as steamrollers, regardless of their method of propulsion.



RCB Machine Pvt Ltd started making road roller 10 year ago. Company increased its production uniformly by fixed number every year. The company produces 800 roller in the 6th year and 1130 roller in the 9th year.

On the basis of the above information, answer any four of the following questions :

What was the company's production in first year ?

- A. 150
- B. 200
- C. 250
- D. 290

Answer: C



[View Text Solution](#)

156. A road roller (sometimes called a roller-compactor, or just roller) is a compactor-type engineering vehicle used to compact soil, gravel, concrete, or asphalt in the construction of roads and foundations. Similar rollers are used also at landfills or in agriculture. Road rollers are frequently referred to as steamrollers, regardless of their method of propulsion.



RCB Machine Pvt Ltd started making road roller 10 year ago. Company increased its production uniformly by fixed number every year. The

company produces 800 roller in the 6th year and 1130 roller in the 9th year.

On the basis of the above information, answer any four of the following questions :

What was the company's production in the 8th year ?

A. 760

B. 820

C. 880

D. 1020

Answer: D



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157. A road roller (sometimes called a roller-compactor, or just roller) is a compactor-type engineering vehicle used to compact soil, gravel, concrete, or asphalt in the construction of roads and foundations. Similar rollers are used also at landfills or in agriculture. Road rollers are

frequently referred to as steamrollers, regardless of their method of propulsion.



RCB Machine Pvt Ltd started making road roller 10 year ago. Company increased its production uniformly by fixed number every year. The company produces 800 roller in the 6th year and 1130 roller in the 9th year.

On the basis of the above information, answer any four of the following questions :

What roller the company's total production of the first 6 years?

A. 3150

B. 1775

C. 2250

D. 1725

Answer: A



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158. A road roller (sometimes called a roller-compactor, or just roller) is a compactor-type engineering vehicle used to compact soil, gravel, concrete, or asphalt in the construction of roads and foundations. Similar rollers are used also at landfills or in agriculture. Road rollers are frequently referred to as steamrollers, regardless of their method of propulsion.



RCB Machine Pvt Ltd started making road roller 10 year ago. Company increased its production uniformly by fixed number every year. The company produces 800 roller in the 6th year and 1130 roller in the 9th year.

On the basis of the above information, answer any four of the following questions :

What was the increase in the company's production every year ?

A. 160

B. 180

C. 90

D. 110

Answer: D

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159. A road roller (sometimes called a roller-compactor, or just roller) is a compactor-type engineering vehicle used to compact soil, gravel, concrete, or asphalt in the construction of roads and foundations. Similar rollers are used also at landfills or in agriculture. Road rollers are frequently referred to as steamrollers, regardless of their method of propulsion.



RCB Machine Pvt Ltd started making road roller 10 year ago. Company increased its production uniformly by fixed number every year. The

company produces 800 roller in the 6th year and 1130 roller in the 9th year.

On the basis of the above information, answer any four of the following questions :

In which year the company's production was 1350 rollers ?

A. 5th

B. 6th

C. 11th

D. 9th

Answer: C

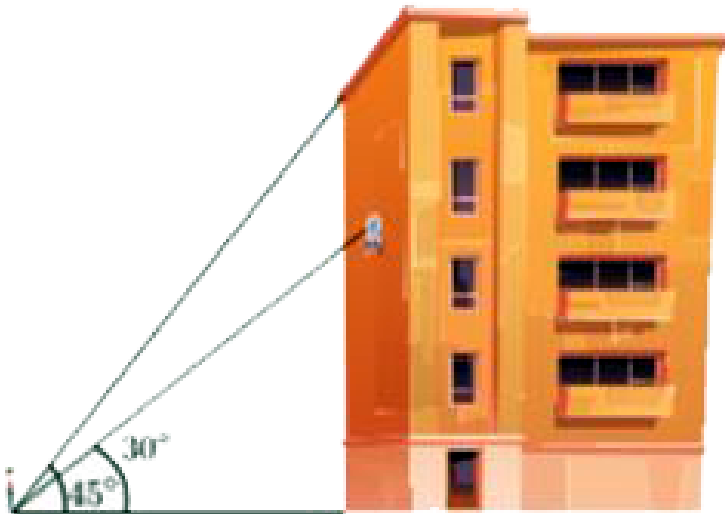


[View Text Solution](#)

160. A clinometer is a tool that is used to measure the angle of elevation, or angle from the ground, in a right - angled triangle. We can use a clinometer to measure the height of tall things that you can't possibly reach to the top of, flag poles, buildings, trees.



Ravish got a clinometer from school lab and started the measuring elevation angle in surrounding. He saw a building on which society logo is painted on wall of building.



From a point P on the ground level, the angle of elevation of the roof of the building is 45° . The angle of elevation of the centre of logo is 30° from same point. The point P is at a distance of 24 m from the base of the

building.

On the basis of the above information, answer any four of the following questions:

What is the height of the building logo from ground ?

A. $8\sqrt{2}m$

B. $4\sqrt{3}m$

C. $8\sqrt{3}m$

D. $4\sqrt{2}m$

Answer: C

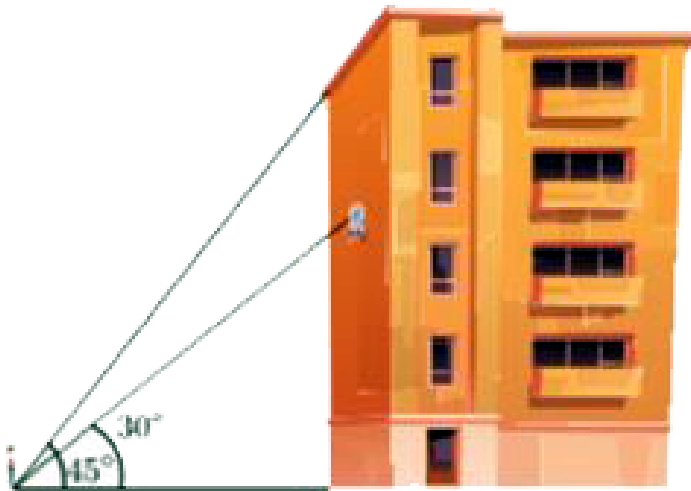


[View Text Solution](#)

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From a point P on the ground level, the angle of elevation of the roof of the building is 45° . The angle of elevation of the centre of logo is 30° from same point. The point P is at a distance of 24 m from the base of the

building.

On the basis of the above information, answer any four of the following questions:

What is the height of the building from ground ?

A. $25(3 - \sqrt{3})m$

B. $8(3 - \sqrt{3})m$

C. 24 m

D. 32 m

Answer: C

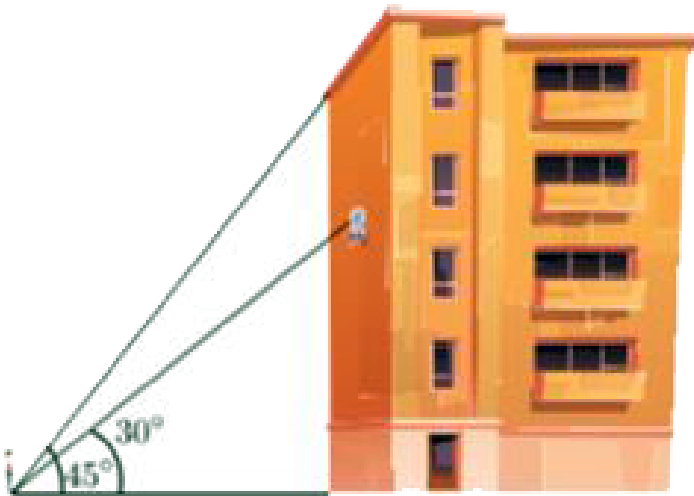


View Text Solution

162. A clinometer is a tool that is used to measure the angle of elevation, or angle from the ground, in a right - angled triangle. We can use a clinometer to measure the height of tall things that you can't possibly reach to the top of, flag poles, buildings, trees.



Ravish got a clinometer from school lab and started the measuring elevation angle in surrounding. He saw a building on which society logo is painted on wall of building.



From a point P on the ground level, the angle of elevation of the roof of the building is 45° . The angle of elevation of the centre of logo is 30° from same point. The point P is at a distance of 24 m from the base of the building.

On the basis of the above information, answer any four of the following questions:

What is the aerial distance of the point P from the top of the building (Hint PC)?

A. $24\sqrt{3}m$

B. $24\sqrt{2}m$

C. $32\sqrt{3}m$

D. $32\sqrt{2}m$

Answer: B

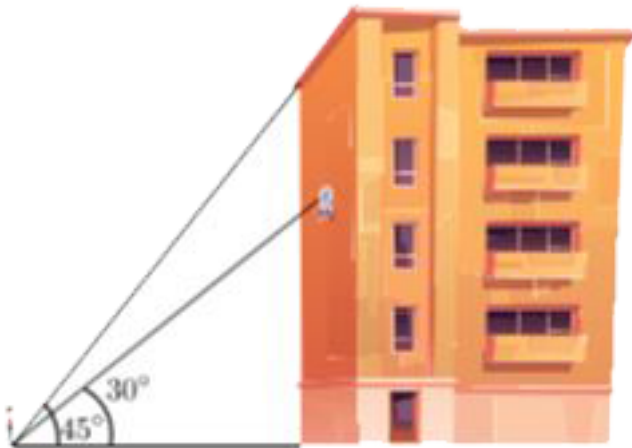


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163. A clinometer is a tool that is used to measure the angle of elevation, or angle from the ground, in a right - angled triangle. We can use a clinometer to measure the height of tall things that you can't possibly reach to the top of, flag poles, buildings, trees.



Ravish got a clinometer from school lab and started the measuring elevation angle in surrounding. He saw a building on which society logo is painted on wall of building.



From a point P on the ground level, the angle of elevation of the roof of the building is 45° . The angle of elevation of the centre of logo is 30° from same point. The point P is at a distance of 24 m from the base of the building.

On the basis of the above information, answer any four of the following questions:

If the point of observation P is moved 9 m towards the base of the building, then the angle of elevation θ of the logo on building is given by

A. $\tan \theta = \sqrt{3}$

B. $\tan \theta = \frac{2}{\sqrt{3}}$

C. $\tan \theta = \frac{1}{2}$

D. $\tan \theta = \frac{8\sqrt{3}}{15}$

Answer: D

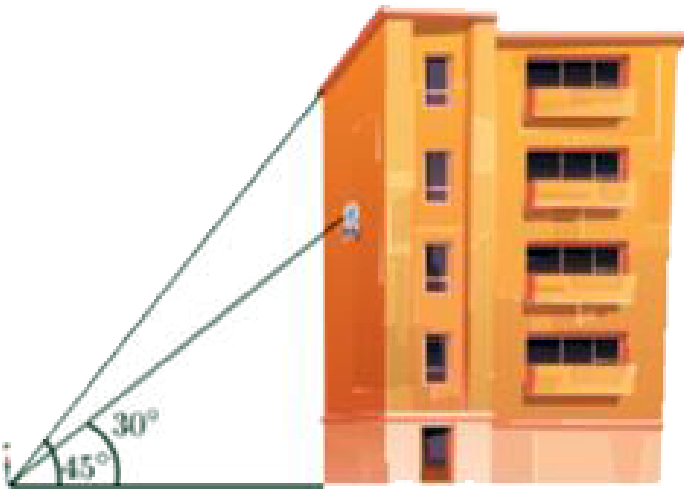


[View Text Solution](#)

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On the basis of the above information, answer any four of the following questions:

In above case the angle of elevation ϕ of the top of building is given by

A. $\tan \phi = 1.6$

B. $\tan \phi = 1.5$

C. $\tan \phi = 0.75$

D. $\tan \phi = 0.8$

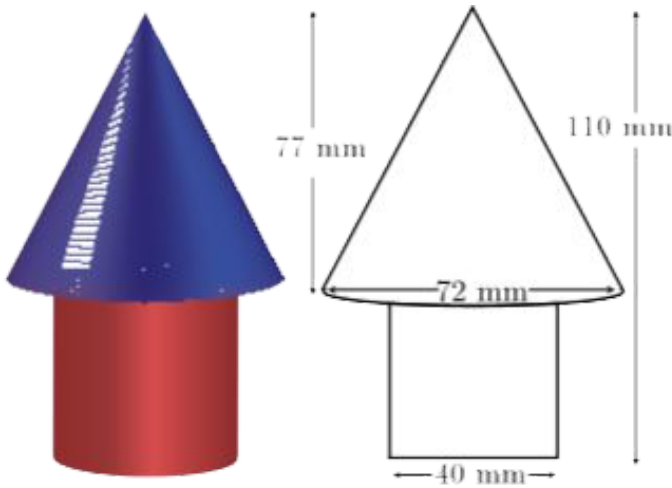
Answer: A



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165. In a toys manufacturing company, wooden parts are assembled and painted to prepare a toy. For the wood processing activity center, the wood is taken out of storage to be sawed, after which it undergoes rough polishing, then is cut, drilled and has holes punched in it. It is then fine polished using sandpaper. For the retail packaging and delivery activity center, the polished wood sub-parts are assembled together, then

decorated using paint.



One specific toy is in the shape of a cone mounted on a cylinder. The total height of the toy is 110 mm and the height of its conical part is 77 mm. The diameters of the base of the conical part is 72 mm and that of the cylindrical part is 40 mm

On the basis of the above information, answer any four of the following questions:

If its cylindrical part is to be painted red, the surface area need to be painted is

A. $2320\pi mm^2$

B. $1120\pi mm^2$

C. $1320\pi mm^2$

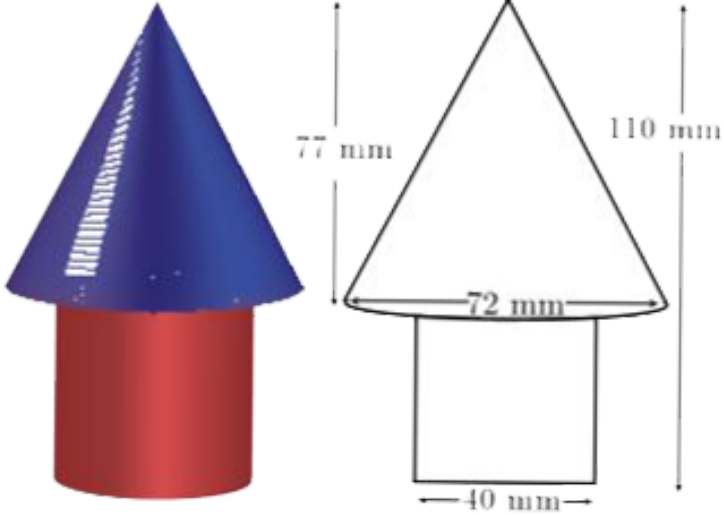
D. $1720\pi mm^2$

Answer: D



[View Text Solution](#)

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On the basis of the above information, answer any four of the following questions:

If its conical part is to be painted blue, the surface area need to be painted is

A. $4328\pi mm^2$

B. $1124\pi mm^2$

C. $3956\pi mm^2$

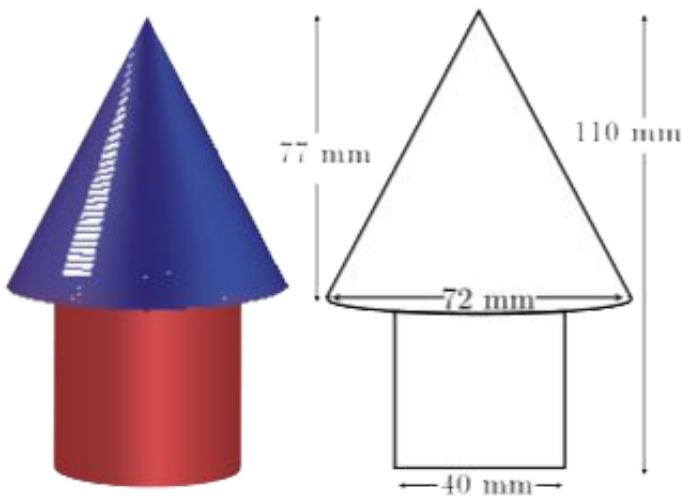
$$D. 3528\pi mm^2$$

Answer: C



[View Text Solution](#)

167. In a toys manufacturing company, wooden parts are assembled and painted to prepare a toy. For the wood processing activity center, the wood is taken out of storage to be sawed, after which it undergoes rough polishing, then is cut, drilled and has holes punched in it. It is then fine polished using sandpaper. For the retail packaging and delivery activity center, the polished wood sub-parts are assembled together, then decorated using paint.



One specific toy is in the shape of a cone mounted on a cylinder. The total height of the toy is 110 mm and the height of its conical part is 77 mm. The diameters of the base of the conical part is 72 mm and that of the cylindrical part is 40 mm

On the basis of the above information, answer any four of the following questions:

How much of the wood have been used in making the toy ?

A. $56824\pi mm^3$

B. $46464\pi mm^3$

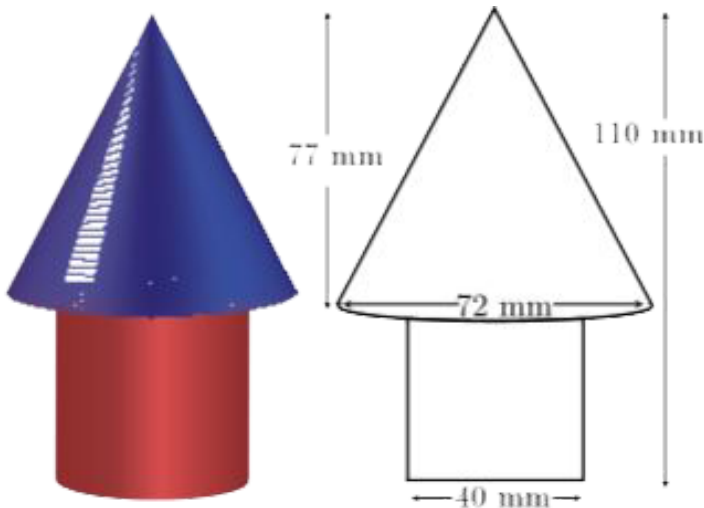
C. $84424\pi mm^3$

D. $64684\pi mm^3$

Answer: B

[View Text Solution](#)

168. In a toys manufacturing company, wooden parts are assembled and painted to prepare a toy. For the wood processing activity center, the wood is taken out of storage to be sawed, after which it undergoes rough polishing, then is cut, drilled and has holes punched in it. It is then fine polished using sandpaper. For the retail packaging and delivery activity center, the polished wood sub-parts are assembled together, then decorated using paint.



One specific toy is in the shape of a cone mounted on a cylinder. The total height of the toy is 110 mm and the height of its conical part is 77 mm. The diameters of the base of the conical part is 72 mm and that of the cylindrical part is 40 mm

On the basis of the above information, answer any four of the following questions:

If the cost of painting the toy is 2 paise for $8\pi mm^2$, then what is the cost of painting of a box of 100 toys?

A. 1598Rs

B. 2558Rs

C. 1419Rs

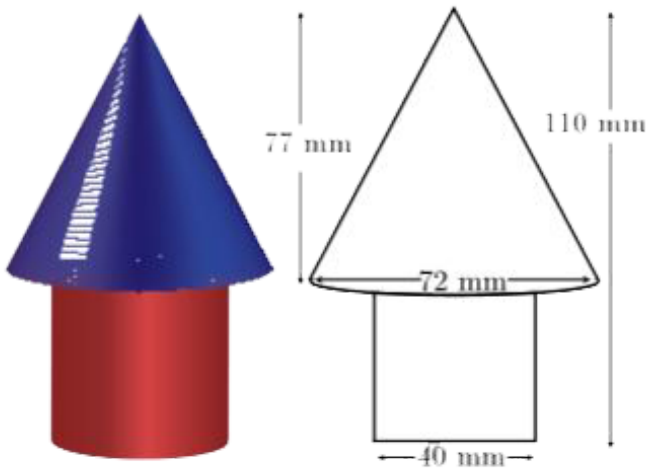
D. 1894Rs

Answer: C



[View Text Solution](#)

169. In a toys manufacturing company, wooden parts are assembled and painted to prepare a toy. For the wood processing activity center, the wood is taken out of storage to be sawed, after which it undergoes rough polishing, then is cut, drilled and has holes punched in it. It is then fine polished using sandpaper. For the retail packaging and delivery activity center, the polished wood sub-parts are assembled together, then decorated using paint.



One specific toy is in the shape of a cone mounted on a cylinder. The total height of the toy is 110 mm and the height of its conical part is 77 mm. The diameters of the base of the conical part is 72 mm and that of the cylindrical part is 40 mm

On the basis of the above information, answer any four of the following

questions:

If the toy manufacturer company charge 3 paise for $32\pi mm^3$ of wood, what is the price of a box of 100 toys?

A. 4356 Rs

B. 4698Rs

C. 4178Rs

D. 4898 Rs

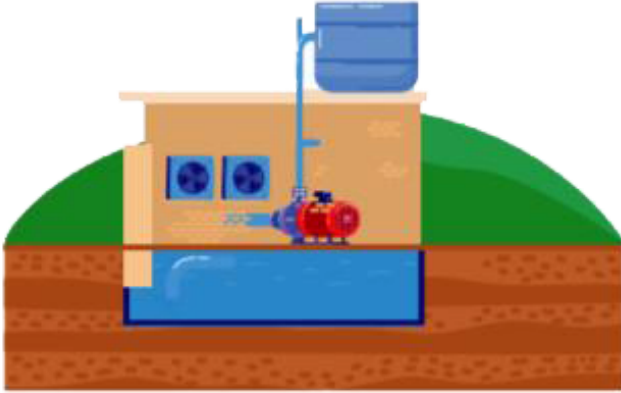
Answer: A



[View Text Solution](#)

170. Underground water tank is popular in India. It is usually used for large water tank storage and can be built cheaply using cement-like materials. Underground water tanks are typically chosen by people who want to save space. The water in the underground tank is not affected by extreme weather conditions. The underground tanks maintain cool temperatures in both winter and summer. Electric pump is used to move

water from the underground tank to overhead tank



Ramesh has build recently his house ans installed a underground tank and overhead tank. Dimensions of tanks are as follows :

Underground Tank: Base $2m \times 2m$ and Height 1.1m

Overhead tank: Pradius 50cm and Height 175cm

On the basis of the above information, answer the following questions:

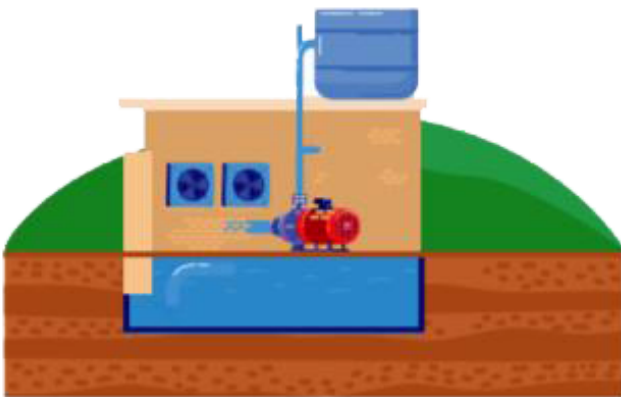
What is the capacity of the sump ?

- A. 2200 Litres
- B. 44000 Litres
- C. 4400 Litres
- D. 22000 Litres

Answer: C

 [View Text Solution](#)

171. Underground water tank is popular in India. It is usually used for large water tank storage and can be built cheaply using cement-like materials. Underground water tanks are typically chosen by people who want to save space. The water in the underground tank is not affected by extreme weather conditions. The underground tanks maintain cool temperatures in both winter and summer. Electric pump is used to move water from the underground tank to overhead tank



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and overhead tank. Dimensions of tanks are as follows :

Underground Tank: Base $2m \times 2m$ and Height 1.1m

Overhead tank: Pradius 50cm and Height 175cm

On the basis of the above information, answer the following questions:

What is the ratio of the capacity of the sump to the capacity of the overhead tank?

A. 1.75

B. 1.25

C. 2.5

D. 3.2

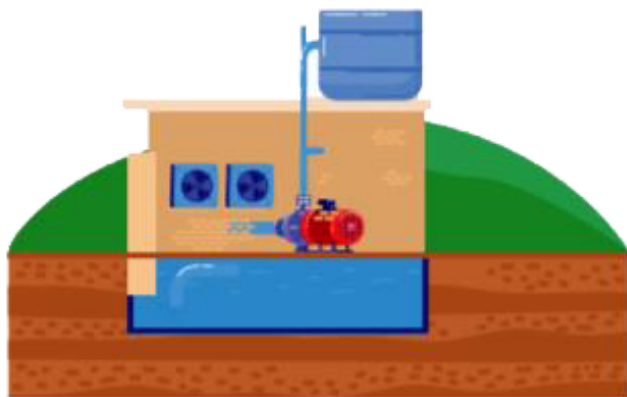
Answer: D



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172. Underground water tank is popular in India. It is usually used for large water tank storage and can be built cheaply using cement-like materials. Underground water tanks are typically chosen by people who

want to save space. The water in the underground tank is not affected by extreme weather conditions. The underground tanks maintain cool temperatures in both winter and summer. Electric pump is used to move water from the underground tank to overhead tank



Ramesh has build recently his house ans installed a underground tank and overhead tank. Dimensions of tanks are as follows :

Underground Tank: Base $2m \times 2m$ and Height 1.1m

Overhead tank: Pradius 50cm and Height 175cm

On the basis of the above information, answer the following questions:

If curved part of overhead tank need to be painted to save it from corrosion, how much area need to be painted?

A. $5.5m^2$

B. $3.3m^2$

C. $2.5m^2$

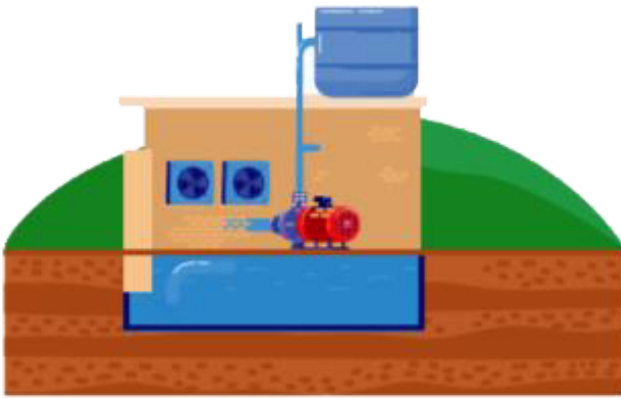
D. $4.5m^2$

Answer: A



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173. Underground water tank is popular in India. It is usually used for large water tank storage and can be built cheaply using cement-like materials. Underground water tanks are typically chosen by people who want to save space. The water in the underground tank is not affected by extreme weather conditions. The underground tanks maintain cool temperatures in both winter and summer. Electric pump is used to move water from the underground tank to overhead tank



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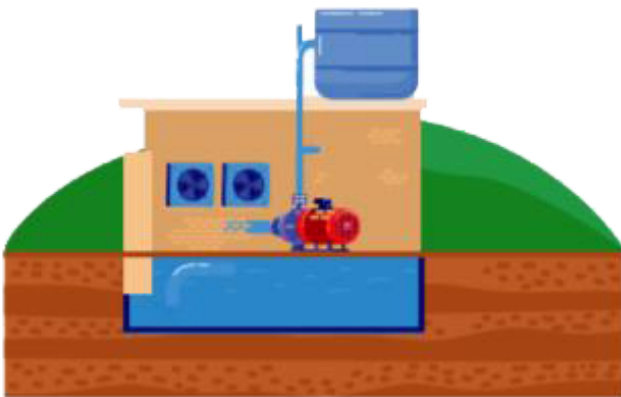
If water is filled in the overhead tank at the rate of 11 litre per minute, the tank will be completely filled in how many time?

- A. 65 minutes
- B. 62.5 minutes
- C. 130 minutes
- D. 125 minutes

Answer: D

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Ramesh has build recently his house ans installed a underground tank

and overhead tank. Dimensions of tanks are as follows :

Underground Tank: Base $2m \times 2m$ and Height 1.1m

Overhead tank: Pradius 50cm and Height 175cm

On the basis of the above information, answer the following questions:

If the amount of water in the sump, at an instant, is 2400 litres , then the water level in the sump at that instant is

- A. 60cm
- B. 69.3cm
- C. 70cm
- D. 60.9cm

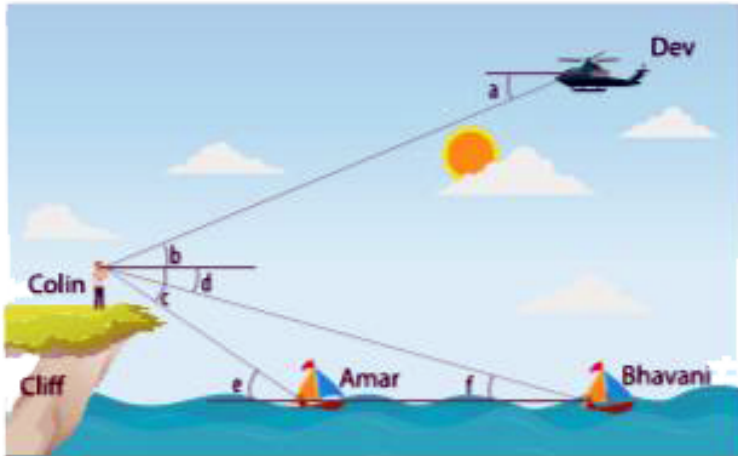
Answer: A



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175. Mr. Colin is a Navy officer who is tasked with planning a coup on the enemy at a certain date. Currently he is inspecting the area standing on top of the cliff. Agent Dev is on a chopper in the sky. When Mr. Colin looks

down below the cliff towards the sea, he has Bhawani and Amar in boats positioned to get a good vantage point. Bhawani boat is behind the Amar boat



Following angle have been measured:

From Colin to Bhawani: 30°

From Dev to Colin : 60°

From Amar to Colin : 60°

On the basis of the above information, answer any four of the following questions:

Which of the following is a pair of angle of elevation?

A. ($\angle a^\circ$, $\angle e^\circ$)

B. ($\angle b^\circ$, $\angle e^\circ$)

C. ($\angle c^\circ$, $\angle d^\circ$)

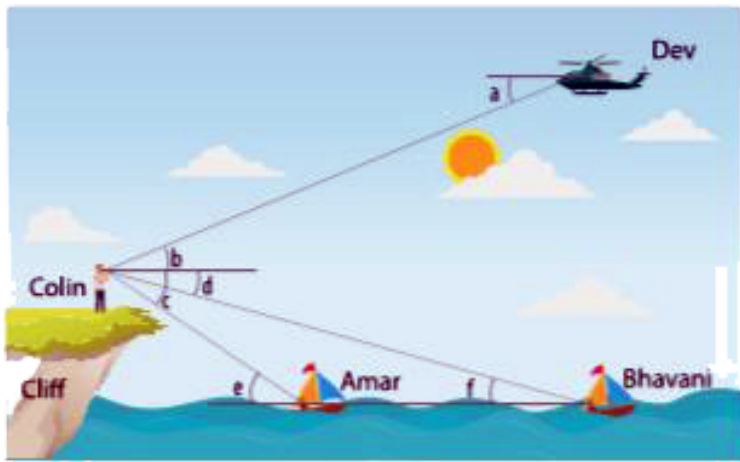
D. ($\angle a^\circ$, $\angle f^\circ$)

Answer: B



[View Text Solution](#)

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Following angle have been measured:

From Colin to Bhawani: 30°

From Dev to Colin : 60°

From Amar to Colin : 60°

On the basis of the above information, answer any four of the following questions:

Which of the following is a pair of angle of depression?

A. ($\angle a^\circ$, $\angle e^\circ$)

B. ($\angle b^\circ$, $\angle e^\circ$)

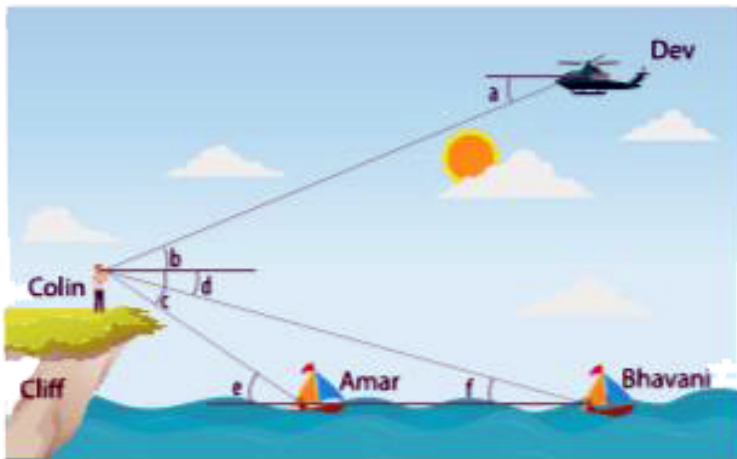
C. ($\angle c^\circ$, $\angle d^\circ$)

D. ($\angle a^\circ$, $\angle f^\circ$)

Answer: C

 [View Text Solution](#)

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Following angle have been measured:

From Colin to Bhawani: 30°

From Dev to Colin : 60°

From Amar to Colin : 60°

On the basis of the above information, answer any four of the following questions:

If angle of elevation of Amar to Colin is 60° , what is the distance of Amar boat from the base of hill?

A. $\frac{\sqrt{3}h}{2}$

B. $\frac{h}{\sqrt{3}}$

C. $\frac{2h}{\sqrt{3}}$

D. $\sqrt{3}h$

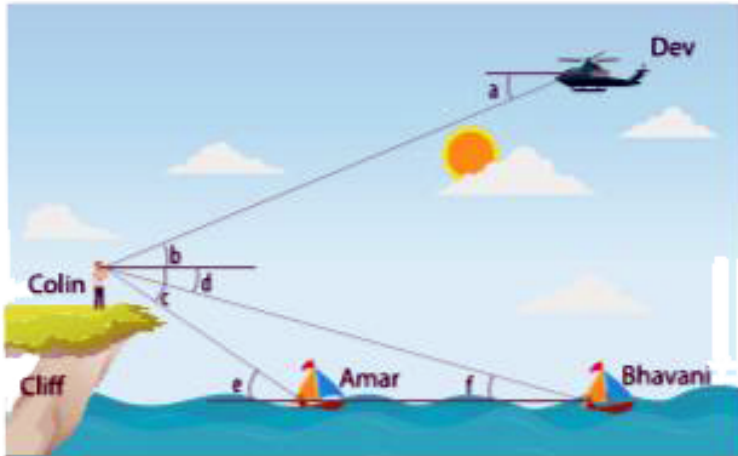
Answer: B



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From Amar to Colin : 60°

On the basis of the above information, answer any four of the following questions:

If angle of depression of Colin to Bhawani is 30° , what is the distance of Amar boat from the Bhawani boat?

A. $\frac{\sqrt{3}h}{2}$

B. $\frac{h}{\sqrt{3}}$

C. $\frac{2h}{\sqrt{3}}$

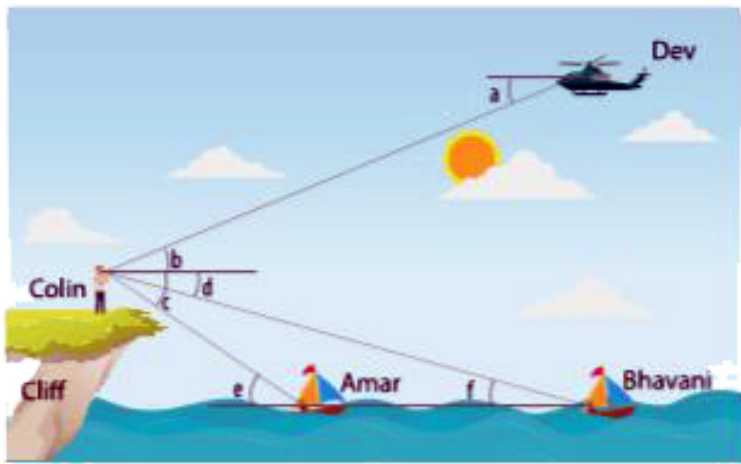
D. $\sqrt{3}h$

Answer: C



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179. Mr. Colin is a Navy officer who is tasked with planning a coup on the enemy at a certain date. Currently he is inspecting the area standing on top of the cliff. Agent Dev is on a chopper in the sky. When Mr. Colin looks down below the cliff towards the sea, he has Bhawani and Amar in boats positioned to get a good vantage point. Bhawani boat is behind the Amar boat



Following angle have been measured:

From Colin to Bhawani: 30°

From Dev to Colin : 60°

From Amar to Colin : 60°

On the basis of the above information, answer any four of the following questions:

If angle of depression of Dev to Colin is 60° , what is the height of Dev from base of hill ?

A. h

B. 2h

C. 3h

D. 4h

Answer: D



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180. The Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund was created on 28 March 2020, following the COVID-19 pandemic in India. The fund will be used for combating, and containment and relief efforts against the coronavirus outbreak and similar pandemic like situations in the future.



The allotment officer is trying to come up with a method to calculate fair

division of funds across various affected families so that the fund amount and amount received per family can be easily adjusted based on daily revised numbers

The total fund allotted is formulated by the officer is $x^3 + 6x^2 + 20x + 9$

. The office has also divided the fund equally among families of the village

and each family receives an amount of $x^2 + 2x + 2$. After distribution, an

amount of $10x + 1$ is left.

On the basis of the above information, answer any four of the following questions:

How many families are there in the village?

A. $x + 4$

B. $x - 3$

C. $x - 4$

D. $x + 3$

Answer: A



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. The office has also divided the fund equally among families of the village and each family receives an amount of $x^2 + 2x + 2$. After distribution, an

amount of $10x + 1$ is left.

On the basis of the above information, answer any four of the following questions:

If an amount of Rs 1911 is left after distribution, what is value of x ?

A. 190

B. 290

C. 191

D. 291

Answer: C



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182. The Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund was created on 28 March 2020, following the COVID-19 pandemic in India. The fund will be used for combating, and containment and relief efforts against the coronavirus outbreak and similar pandemic like situations in the future.



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The total fund allotted is formulated by the officer is $x^3 + 6x^2 + 20x + 9$. The office has also divided the fund equally among families of the village and each family receives an amount of $x^2 + 2x + 2$. After distribution, an amount of $10x + 1$ is left.

On the basis of the above information, answer any four of the following questions:

How much amount does each family receive?

A. 24490

B. 34860

C. 22540

D. 36865

Answer: D



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183. The Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund was created on 28 March 2020, following the COVID-19 pandemic in India. The fund will be used for combating, and containment and relief efforts against the coronavirus outbreak and similar pandemic like situations in the future.



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On the basis of the above information, answer any four of the following questions:

What is the amount of fund allocated?

A. Rs 72 72 759

B. Rs 75 72 681

C. Rs 69 72 846

D. Rs 82 74 888

Answer: C



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184. The Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund was created on 28 March 2020, following the COVID-19 pandemic in India. The fund will be used for combating, and containment and relief efforts against the coronavirus outbreak and similar pandemic like situations in the future.



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On the basis of the above information, answer any four of the following questions:

How many families are there in the village ?

B. 98

C. 187

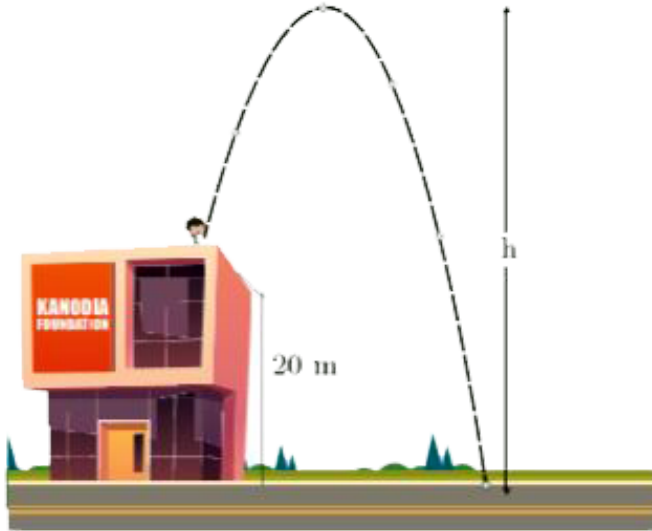
D. 195

Answer: D



[View Text Solution](#)

185. Lavanya throws a ball upwards, from a rooftop, which is 20 m above from ground. It will reach a maximum height and then fall back to the ground. The height of the ball from the ground at time t is h , which is given by $h = -4t^2 + 16t + 20$



On the basis of the above information, answer any four of the following questions:

What is the height reached by the ball after 1 second?

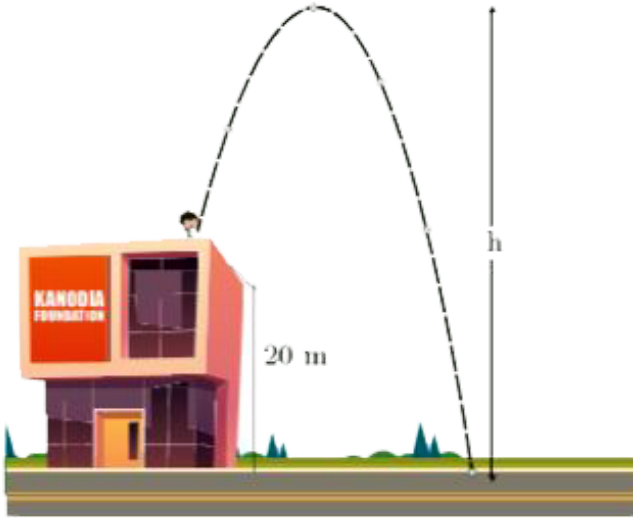
- A. 64m
- B. 128m
- C. 32m
- D. 20m

Answer: C



[View Text Solution](#)

186. Lavanya throws a ball upwards, from a rooftop, which is 20 m above from ground. It will reach a maximum height and then fall back to the ground. The height of the ball from the ground at time t is h , which is given by $h = -4t^2 + 16t + 20$



On the basis of the above information, answer any four of the following questions:

What is the maximum height reached by the ball?

- A. 54m
- B. 44m
- C. 36m

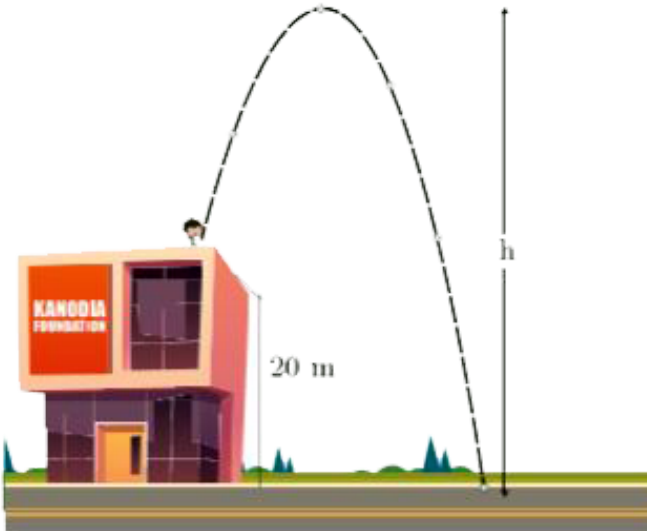
D. 18m

Answer: C



[View Text Solution](#)

187. Lavanya throws a ball upwards, from a rooftop, which is 20 m above from ground. It will reach a maximum height and then fall back to the ground. The height of the ball from the ground at time t is h , which is given by $h = -4t^2 + 16t + 20$



On the basis of the above information, answer any four of the following

questions:

How long will the ball take to hit the ground?

A. 4 seconds

B. 3 seconds

C. 5 seconds

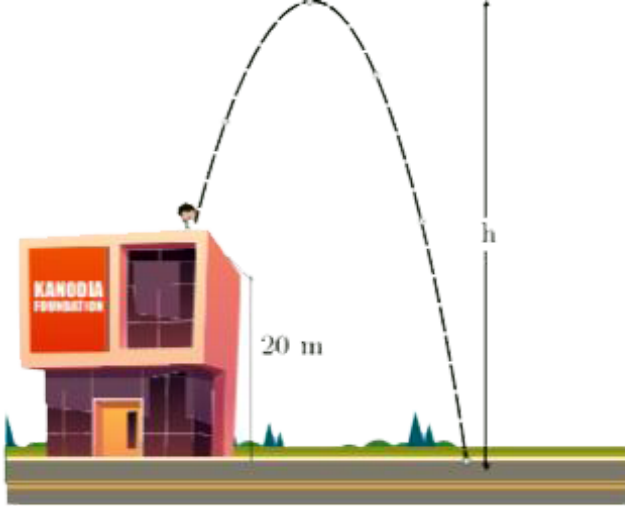
D. 6 seconds

Answer: C



[View Text Solution](#)

188. Lavanya throws a ball upwards, from a rooftop, which is 20 m above from ground. It will reach a maximum height and then fall back to the ground. The height of the ball from the ground at time t is h , which is given by $h = -4t^2 + 16t + 20$



On the basis of the above information, answer any four of the following questions:

What are the two possible times to reach the ball at the same height of 32m?

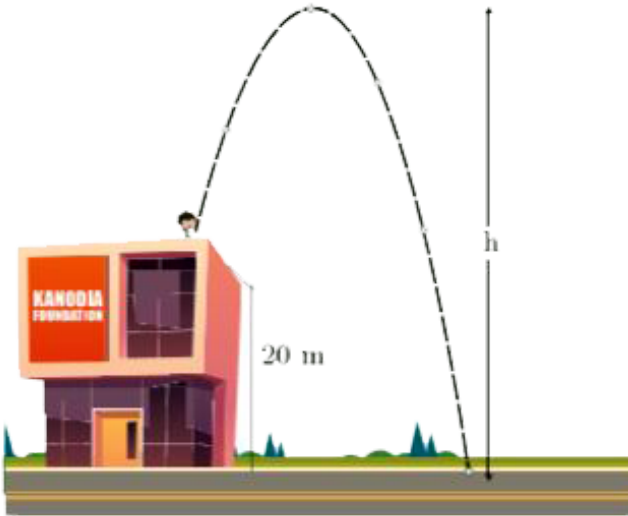
- A. 1 and 3 seconds
- B. 1.5 and 2.5 seconds
- C. 0.5 and 2.5 seconds
- D. 1.6 and 2.6 seconds

Answer: A



[View Text Solution](#)

189. Lavanya throws a ball upwards, from a rooftop, which is 20 m above from ground. It will reach a maximum height and then fall back to the ground. The height of the ball from the ground at time t is h , which is given by $h = -4t^2 + 16t + 20$



On the basis of the above information, answer any four of the following questions:

Where is the ball after 5 seconds?

- A. at the ground
- B. rebounds
- C. at highest point

D. fall back

Answer: B

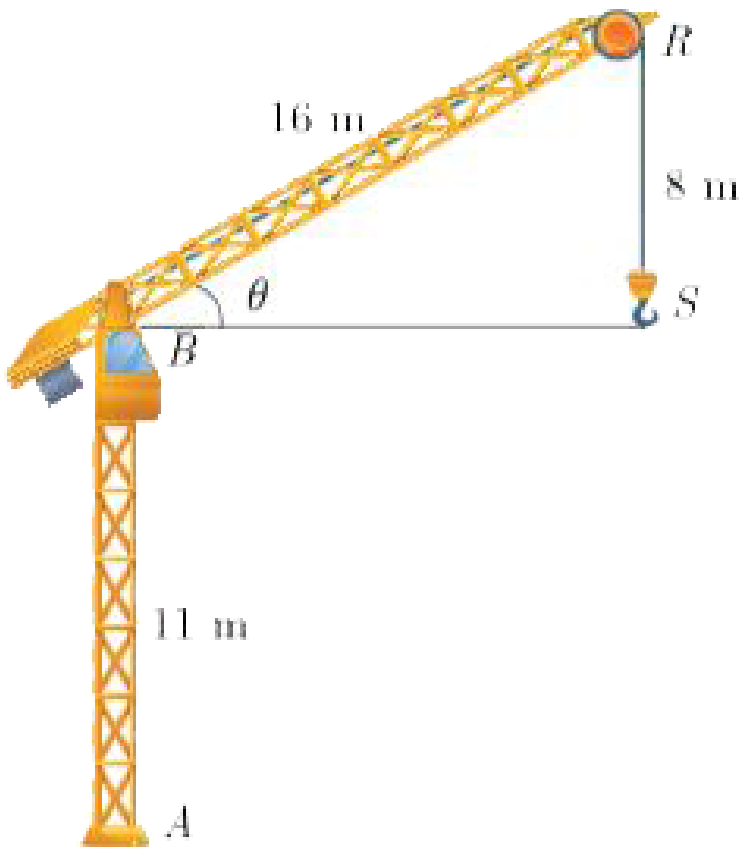


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190. Tower cranes are a common fixture at any major construction site. They're pretty hard to miss – they often rise hundreds of feet into the air, and can reach out just as far. The construction crew uses the tower crane to lift steel, concrete, large tools like acetylene torches and generators, and a wide variety of other building materials.



A crane stands on a level ground. It is represented by a tower AB , of height 11m and a jib BR . The jib is of length 20m and can rotate in a vertical plane about B . A vertical cable, RS , carries a load S . The diagram shows current position of the jib, cable and load.



On the basis of the above information, answer any four of the following question :

What is the length BS?

A. $8\sqrt{3}m$

B. $4\sqrt{3}m$

C. $4\sqrt{2}m$

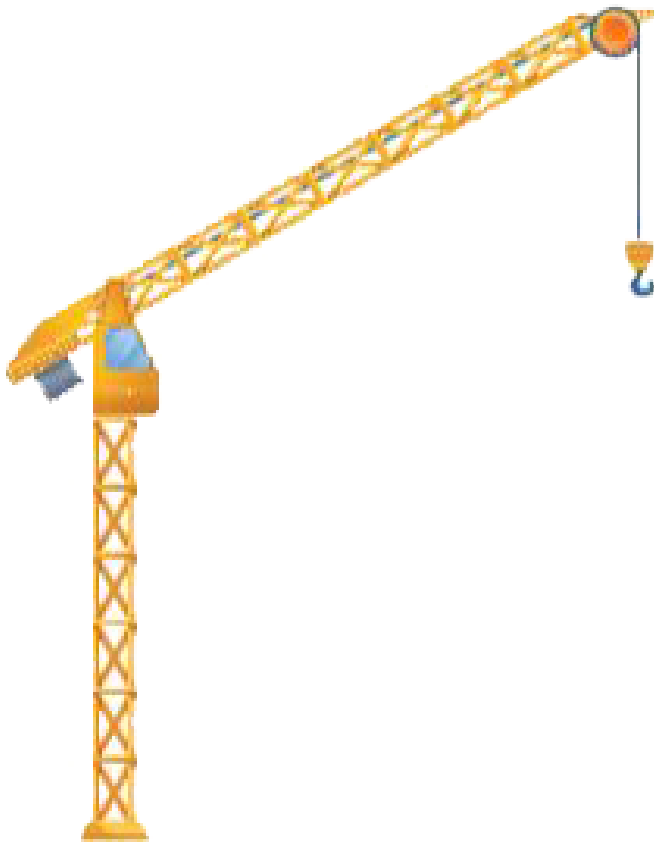
D. $8\sqrt{2}m$

Answer: A

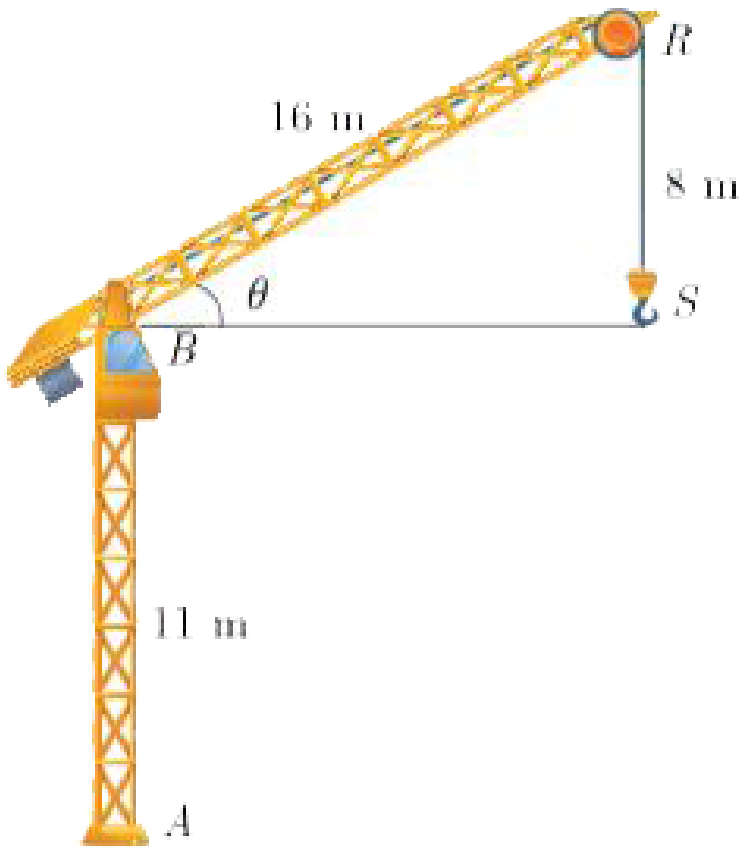


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On the basis of the above information, answer any four of the following question :

What is the angle that the jib, BR , makes with the horizontal ?

- A. 45°
- B. 30°
- C. 60°

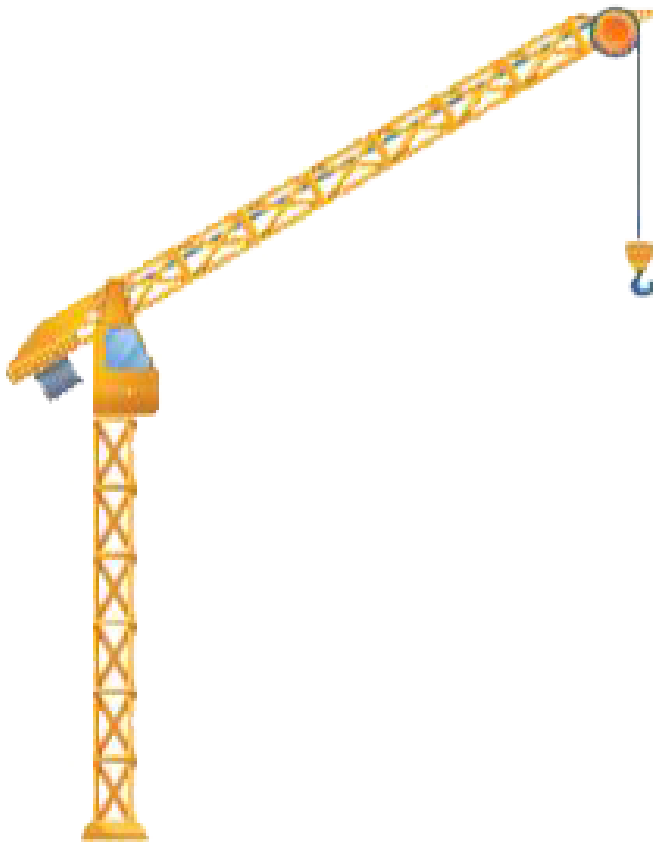
D. 75°

Answer: B

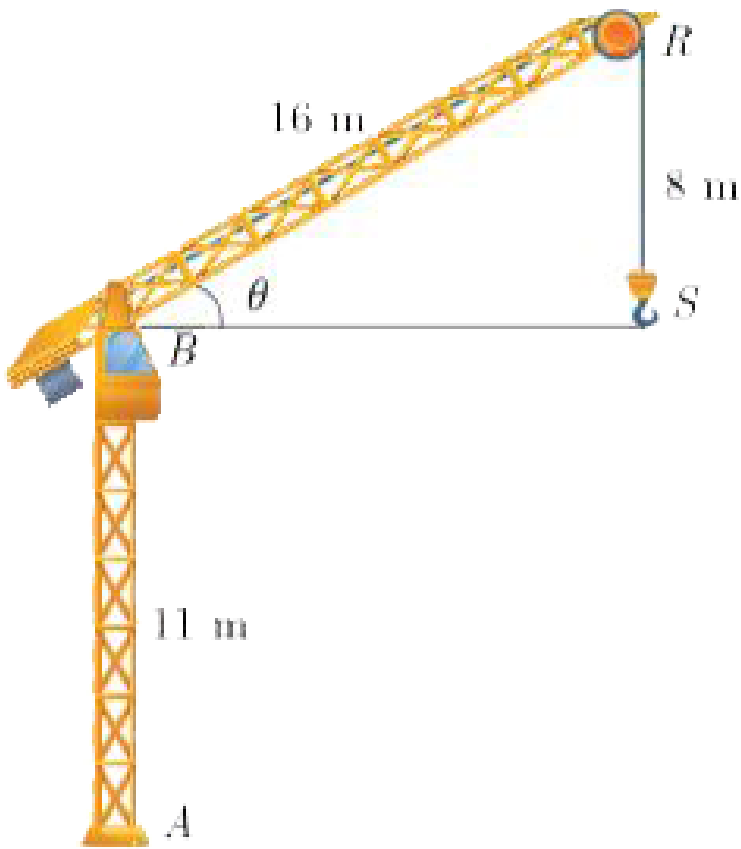


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On the basis of the above information, answer any four of the following question :

What is the measure of the angle BRS ?

- A. 60°
- B. 75°
- C. 30°

D. 45°

Answer: C

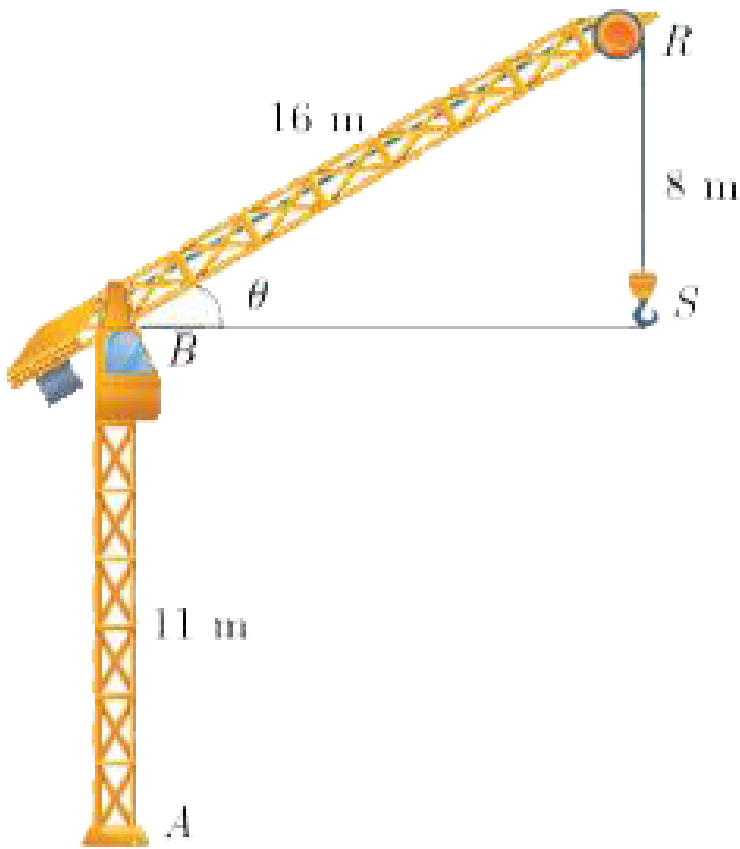


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On the basis of the above information, answer any four of the following question :

Now the jib BR , has been rotated and the length RS is increased. The load is now on the ground at a point 8 m from A . What is the angle through which the jib has been rotated?

A. 15°

B. 25°

C. 30°

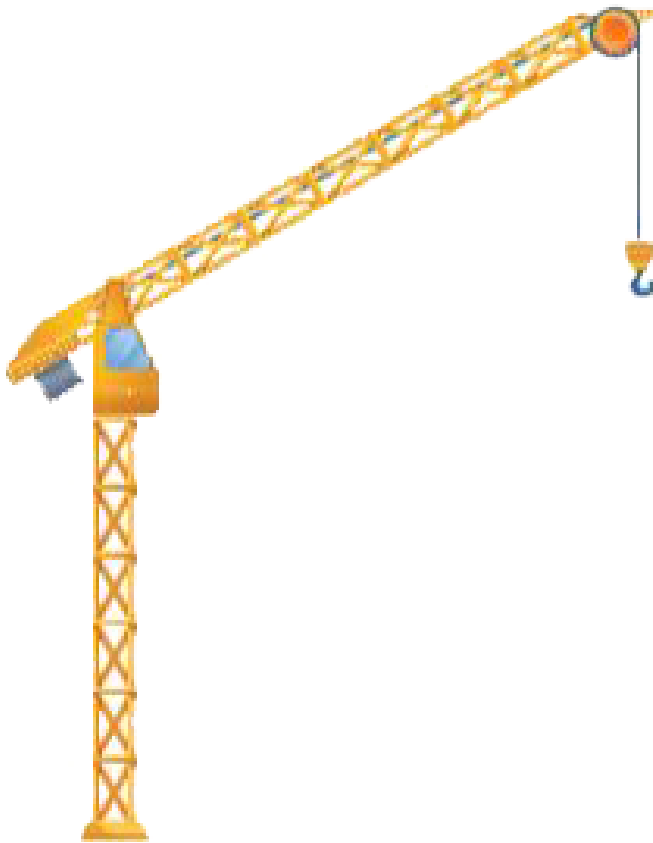
D. 45°

Answer: C

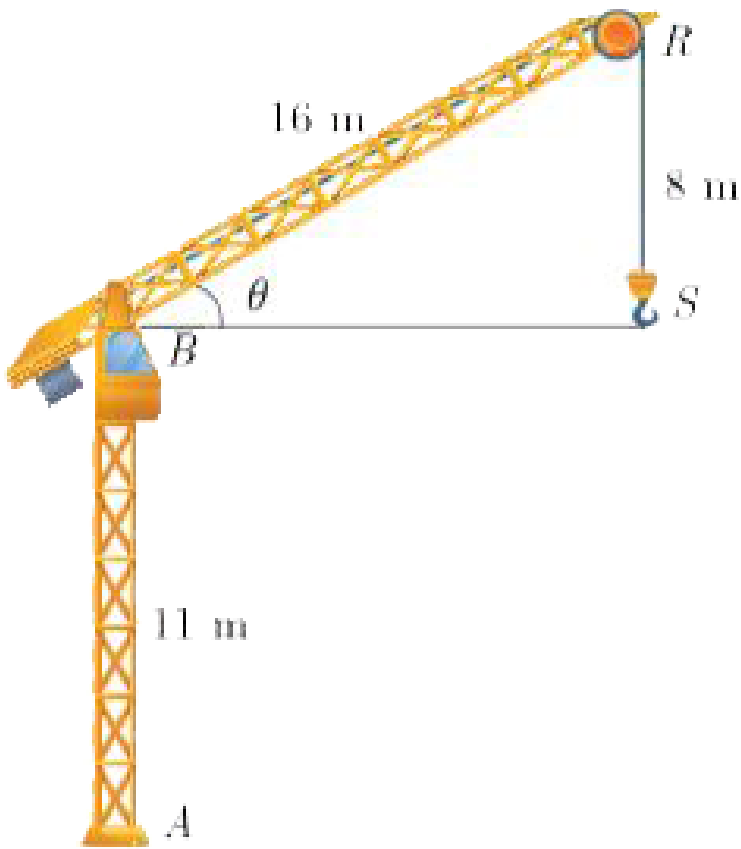


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On the basis of the above information, answer any four of the following question :

What is the length by which RS has been increased ?

- A. $8\sqrt{3}m$
- B. $8(\sqrt{3} + 1)m$
- C. $8(\sqrt{2} + 1)m$

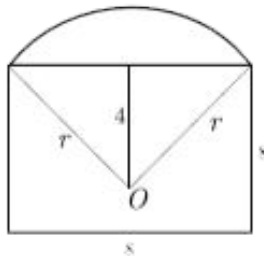
$$D. 8(\sqrt{3} + 2)m$$

Answer: C



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195. A barn is an agricultural building usually on farms and used for various purposes. In the North American area, a barn refers to structures that house livestock, including cattle and horses, as well as equipment and fodder, and often grain.



Ramkaran want to build a barn at his farm. He has make a design for it which is above. Here roof is arc of a circle of radius r at centre O .

On the basis of the above information, answer any four of the following questions:

What is the value of radius of arc ?

A. $4\sqrt{3}m$

B. $4\sqrt{2}m$

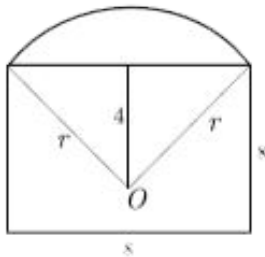
C. $4\sqrt{3}m$

D. $2\sqrt{2}m$

Answer:

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196. A barn is an agricultural building usually on farms and used for various purposes. In the North American area, a barn refers to structures that house livestock, including cattle and horses, as well as equipment and fodder, and often grain.



Ramkaran want to build a barn at his farm. He has make a design for it

which is above. Here roof is arc of a circle of radius r at centre O .

On the basis of the above information, answer any four of the following questions:

What is the length of BF ?

A. $4(\sqrt{3} + 1)$

B. $4(\sqrt{2} + 1)$

C. $4(\sqrt{3} - 1)$

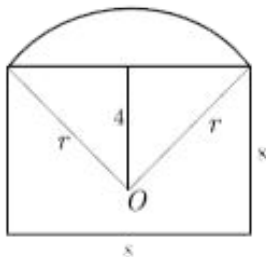
D. $4(\sqrt{2} - 1)$

Answer:



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197. A barn is an agricultural building usually on farms and used for various purposes. In the North American area, a barn refers to structures that house livestock, including cattle and horses, as well as equipment and fodder, and often grain.



Ramkaran want to build a barn at his farm. He has make a design for it which is above. Here roof is arc of a circle of radius r at centre O .

On the basis of the above information, answer any four of the following questions:

What is the value of angle $\angle AOC$?

A. 30°

B. 90°

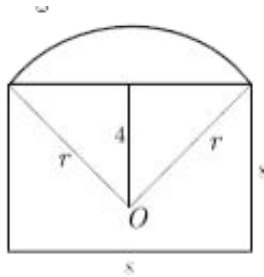
C. 45°

D. 60°

Answer:

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Ramkaran want to build a barn at his farm. He has make a design for it which is above. Here roof is arc of a circle of radius r at centre O .

On the basis of the above information, answer any four of the following questions:

What is the curved width of roof ?

A. $2\pi\sqrt{3}m$

B. $4\pi\sqrt{2}m$

C. $2\pi\sqrt{2}m$

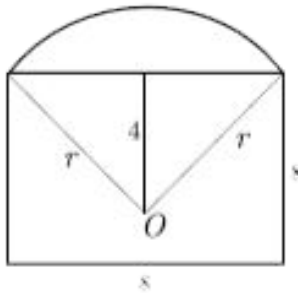
D. $4\pi\sqrt{3}m$

Answer:



[View Text Solution](#)

199. A barn is an agricultural building usually on farms and used for various purposes. In the North American area, a barn refers to structures that house livestock, including cattle and horses, as well as equipment and fodder, and often grain.



Ramkaran want to build a barn at his farm. He has make a design for it which is above. Here roof is arc of a circle of radius r at centre O .

On the basis of the above information, answer any four of the following questions:

What is area of cross section of barn ?

A. $8(6 + \pi)m^2$

B. $4(6 + \pi)m^2$

C. $8(3 + \pi)m^2$

D. $4(3 + \pi)m^2$

Answer:



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200. Apples are most widely planted and are commercially the most important fruit crop in Jammu and Kashmir. The cultivation of apple crop in Jammu and Kashmir shows particular interest for a number of reasons. In terms of both area and production, apple is very beneficial fruit crop. This provides a major source of income and employment in Jammu and Kashmir.



Horticultural department has tasked their statistical officer to create a model for farmers to be able to predict their produce output based on various factors.

A box containing 250 apples was opened and each apple was weighed.

The distribution of the masses of the apples is given in the following table:

Mass (in grams)	80 – 100	100 – 120	120 – 140	140 – 160	160 – 180
Frequency	20	60	70	x	60

On the basis of the above information, answer any four of the following questions:

How many apples are in the range 140 – 160 mass?

A. 40

B. 50

C. 60

D. 70

Answer: A



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Mass (in grams)	80 – 100	100 – 120	120 – 140	140 – 160	160 – 180
Frequency	20	60	70	x	60

On the basis of the above information, answer any four of the following questions:

What is the mean mass of the apples?

- A. 131 grams
- B. 135 grams
- C. 150 grams
- D. 156 grams

Answer: B



[View Text Solution](#)

202. Apples are most widely planted and are commercially the most important fruit crop in Jammu and Kashmir. The cultivation of apple crop in Jammu and Kashmir shows particular interest for a number of reasons. In terms of both area and production, apple is very beneficial fruit crop. This provides a major source of income and employment in Jammu and Kashmir.



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The distribution of the masses of the apples is given in the following table:

Mass (in grams)	80 – 100	100 – 120	120 – 140	140 – 160	160 – 180
Frequency	20	60	70	x	60

On the basis of the above information, answer any four of the following questions:

What is the upper limit of the median class?

- A. 80
- B. 100
- C. 120
- D. 140

Answer: D



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203. Apples are most widely planted and are commercially the most important fruit crop in Jammu and Kashmir. The cultivation of apple crop in Jammu and Kashmir shows particular interest for a number of reasons. In terms of both area and production, apple is very beneficial fruit crop. This provides a major source of income and employment in Jammu and Kashmir.



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The distribution of the masses of the apples is given in the following table:

Mass (in grams)	80 – 100	100 – 120	120 – 140	140 – 160	160 – 180
Frequency	20	60	70	x	60

On the basis of the above information, answer any four of the following questions:

What is the modal mass of the apples?

A. 122 grams

B. 125 grams

C. 128 grams

D. 132 grams

Answer: B



[View Text Solution](#)

204. Apples are most widely planted and are commercially the most important fruit crop in Jammu and Kashmir. The cultivation of apple crop in Jammu and Kashmir shows particular interest for a number of reasons. In terms of both area and production, apple is very beneficial fruit crop. This provides a major source of income and employment in Jammu and Kashmir.



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Mass (in grams)	80 – 100	100 – 120	120 – 140	140 – 160	160 – 180
Frequency	20	60	70	x	60

On the basis of the above information, answer any four of the following questions:

What is the median mass of the apples?

- A. 122.33 grams
- B. 128.67 grams
- C. 131.67 grams
- D. 136.33 grams

Answer: C



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205. Formula one Portugese Grand Prix technical team at the Algarve International Circuit are analysing last year data of drivers' performance to provide valuable inferences to commentators on how the drivers can improve this year.



The length of time taken by 80 drivers to complete a journey is given in the table below: Times (in minutes)

Times (in minutes)	70 – 80	80 – 90	90 – 100	100 – 110	110 – 120
Number of drivers	4	10	14	20	24

On the basis of the above information, answer any four of the following questions:

What is the estimate of the mean time (in minutes) taken to complete the journey ?

B. 94

C. 101

D. 112

Answer: A



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206. Formula one Portugese Grand Prix technical team at the Algarve International Circuit are analysing last year data of drivers' performance to provide valuable inferences to commentators on how the drivers can improve this year.



The length of time taken by 80 drivers to complete a journey is given in the table below: Times (in minutes)

Times (in minutes)	70 – 80	80 – 90	90 – 100	100 – 110	110 – 120
Number of drivers	4	10	14	20	24

On the basis of the above information, answer any four of the following questions:

In which interval does the median of the distribution lie?

- A. 80-90
- B. 90-100
- C. 100-110
- D. 110-120

Answer: C



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207. Formula one Portugese Grand Prix technical team at the Algarve International Circuit are analysing last year data of drivers' performance to provide valuable inferences to commentators on how the drivers can

improve this year.



The length of time taken by 80 drivers to complete a journey is given in the table below: Times (in minutes)

Times (in minutes)	70 – 80	80 – 90	90 – 100	100 – 110	110 – 120
Number of drivers	4	10	14	20	24

On the basis of the above information, answer any four of the following questions:

In which interval does the mode of the distribution lie?

- A. 80-90
- B. 90-100
- C. 100-110
- D. 110-120

Answer: D



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208. Formula one Portugese Grand Prix technical team at the Algarve International Circuit are analysing last year data of drivers' performance to provide valuable inferences to commentators on how the drivers can improve this year.



The length of time taken by 80 drivers to complete a journey is given in the table below: Times (in minutes)

Times (in minutes)	70 – 80	80 – 90	90 – 100	100 – 110	110 – 120
Number of drivers	4	10	14	20	24

On the basis of the above information, answer any four of the following

questions:

What is the model time taken to complete journey ?

A. 112

B. 118

C. 101

D. 108

Answer: D



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209. Formula one Portugese Grand Prix technical team at the Algarve International Circuit are analysing last year data of drivers' performance to provide valuable inferences to commentators on how the drivers can improve this year.



The length of time taken by 80 drivers to complete a journey is given in the table below: Times (in minutes)

Times (in minutes)	70 – 80	80 – 90	90 – 100	100 – 110	110 – 120
Number of drivers	4	10	14	20	24

On the basis of the above information, answer any four of the following questions:

What is the median time taken to complete journey ?

- A. 107
- B. 118
- C. 98
- D. 103

Answer: A



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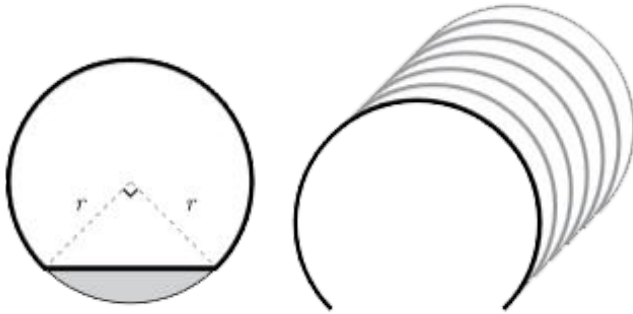
210. The tunnels are defined as the underground passages that are used for the transportation purposes. These permit the transmission of passengers and freights, or it may be for the transportation of utilities like water, sewage or gas etc. The tunnel engineering is one of the most interesting disciplines in engineering. The work is complex and difficult throughout its course, even though it is interesting.



Earth is excavated to make a road tunnel. The tunnel is a cylinder of radius 7 m and length 450 m.

A level surface is laid inside the tunnel to make road. The Diagram 1

shows the circular cross - section of the tunnel. The level surface is represented by AB, the centre of the circle is O and $\angle AOB = 90^\circ$. The space below AB is filled with rubble (debris from the demolition buildings).



Steel girders are erected above the tracks to strengthen the tunnel. Some of these are shown in Diagram 2. The girders are erected at 6 m intervals along the length of the tunnel, with one at each end.

On the basis of the above information, answer any four of the following questions:

What is the cross section area of tunnel before filling debris on ground plane ?

A. $154m^2$

B. $140m^2$

C. $155m^2$

D. $145m^2$

Answer: A



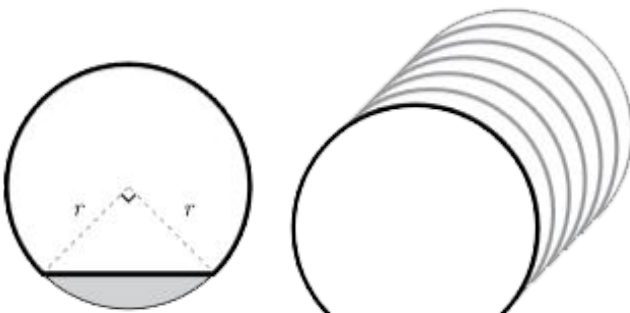
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On the basis of the above information, answer any four of the following questions:

What is the area of cross section of tunnel after filling debris on ground plane?

A. $138m^2$

B. $140m^2$

C. $152m^2$

D. $145m^2$

Answer: B



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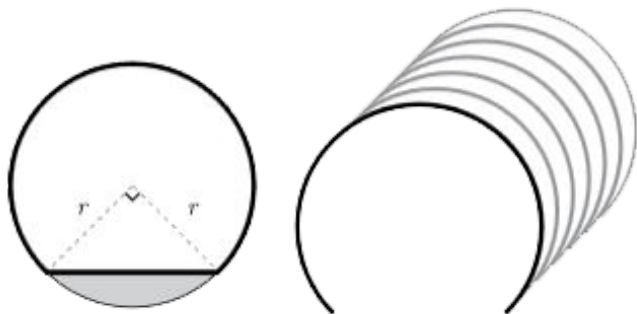
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On the basis of the above information, answer any four of the following questions:

What is the length of each girder ?

- A. 11 m
- B. 22 m
- C. 33 m
- D. 44 m

Answer: C



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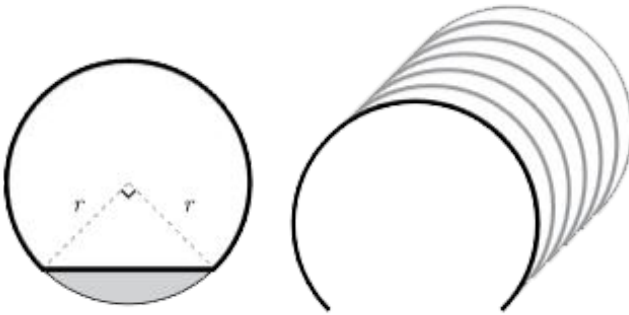
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space below AB is filled with rubble (debris from the demolition buildings).



Steel girders are erected above the tracks to strengthen the tunnel. Some of these are shown in Diagram 2. The girders are erected at 6 m intervals along the length of the tunnel, with one at each end.

On the basis of the above information, answer any four of the following questions:

How many girders are erected ?

A. 76

B. 75

C. 74

D. 73

Answer: A

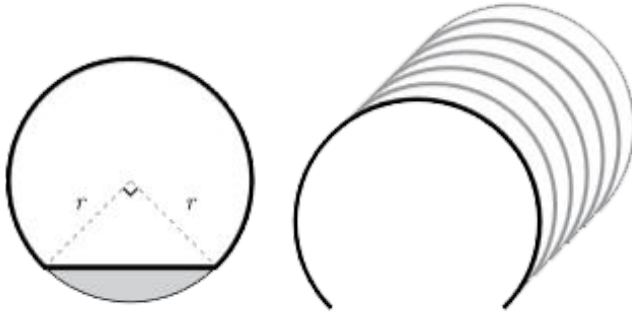
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Steel girders are erected above the tracks to strengthen the tunnel. Some of these are shown in Diagram 2. The girders are erected at 6 m intervals along the length of the tunnel, with one at each end.

On the basis of the above information, answer any four of the following questions:

If the weight of 1 meter girder is 25 kg, how much steel is required ?

A. 2508 quintals

B. 627 quintals

C. 2246 quintals

D. 1646 quintals

Answer: B

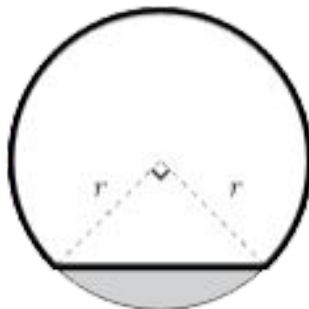


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215. Atal Tunnel (also known as Rohtang Tunnel) is a highway tunnel built under the Rohtang Pass in the eastern Pir Panjal range of the Himalayas on the Leh-Manali Highway in Himachal Pradesh, India. At a length of 9.02 km, it is the longest tunnel above 10,000 feet (3,048 m) in the world and is named after former Prime Minister of India, Atal Bihari Vajpayee. The tunnel reduces the travel time and overall distance between Manali and Keylong on the way to Leh. Moreover, the tunnel bypasses most of the sites that were prone to road blockades, avalanches, and traffic snarls.



Earth is excavated to make a railway tunnel. The tunnel is a cylinder of radius 7 m and length 450 m. A level surface is laid inside the tunnel to carry the railway lines. The Diagram 1 shows the circular cross - section of the tunnel. The level surface is represented by AB, the centre of the circle is O and $\angle AOB = 90^\circ$. The space below AB is filled with rubble (debris from the demolition buildings).



Steel girders are erected above the tracks to strengthen the tunnel. Some of these are shown in Diagram 2. The girders are erected at 6 m intervals along the length of the tunnel, with one at each end.

On the basis of the above information, answer any four of the following questions:

How much volume of earth is removed to make the tunnel ?

A. $58700m^3$

B. $61400m^3$

C. $62700m^3$

D. $69300m^3$

Answer: D



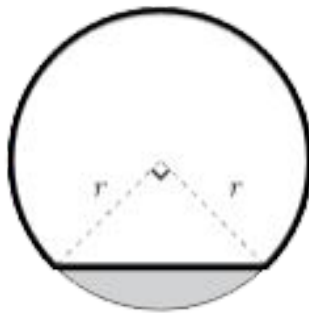
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Steel girders are erected above the tracks to strengthen the tunnel. Some of these are shown in Diagram 2. The girders are erected at 6 m intervals along the length of the tunnel, with one at each end.

On the basis of the above information, answer any four of the following questions:

If the cost of excavation of 1 cubic meter is Rs 250, what is the total cost of excavation?

- A. Rs 17325000
- B. Rs 34650000
- C. Rs 8662500
- D. Rs 12677500

Answer: A

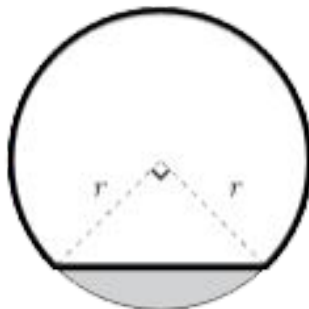


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217. Atal Tunnel (also known as Rohtang Tunnel) is a highway tunnel built under the Rohtang Pass in the eastern Pir Panjal range of the Himalayas on the Leh-Manali Highway in Himachal Pradesh, India. At a length of 9.02 km, it is the longest tunnel above 10,000 feet (3,048 m) in the world and is named after former Prime Minister of India, Atal Bihari Vajpayee. The tunnel reduces the travel time and overall distance between Manali and Keylong on the way to Leh. Moreover, the tunnel bypasses most of the sites that were prone to road blockades, avalanches, and traffic snarls.



Earth is excavated to make a railway tunnel. The tunnel is a cylinder of radius 7 m and length 450 m. A level surface is laid inside the tunnel to carry the railway lines. The Diagram 1 shows the circular cross - section of the tunnel. The level surface is represented by AB, the centre of the circle is O and $\angle AOB = 90^\circ$. The space below AB is filled with rubble (debris from the demolition buildings).



Steel girders are erected above the tracks to strengthen the tunnel. Some of these are shown in Diagram 2. The girders are erected at 6 m intervals along the length of the tunnel, with one at each end.

On the basis of the above information, answer any four of the following questions:

A coating is to be done on the surface of inner curved part of tunnel.

What is the area of tunnel to be being coated ?

A. $12300m^2$

B. $14850m^2$

C. $15250m^2$

D. $21200m^2$

Answer: B



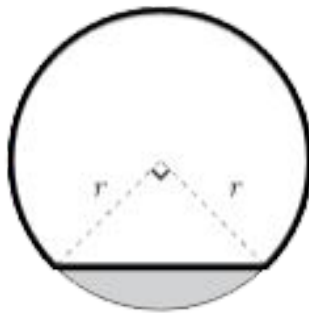
[View Text Solution](#)

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Steel girders are erected above the tracks to strengthen the tunnel. Some of these are shown in Diagram 2. The girders are erected at 6 m intervals along the length of the tunnel, with one at each end.

On the basis of the above information, answer any four of the following questions:

Costing of coating is Rs 30 per m^2 . What is the total cost of coating ?

- A. Rs 5588000
- B. Rs 445500
- C. Rs 339900
- D. Rs 228800

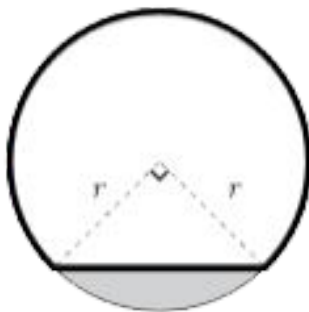
Answer: B

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On the basis of the above information, answer any four of the following questions:

How much volume of debris is required to fill the ground surface of tunnel ?

A. $3500m^3$

B. $14000m^3$

C. $7000m^3$

D. $10500m^3$

Answer: C

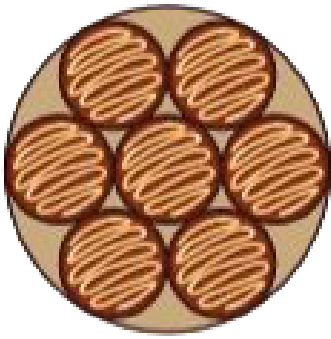


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220. A bakery is an establishment that produces and sells flour-based food baked in an oven such as bread, cookies, cakes, pastries, and pies. Some retail bakeries are also categorized as cafés, serving coffee and tea to customers who wish to consume the baked goods on the premises.



Tania runs a bakery shop and her bakery is very famous for her tasty biscuits. The amount of mixture required to make one biscuit is 18 cu cm . Before it is cooked, the mixture is rolled into a sphere. After the biscuit is cooked, the biscuit becomes a cylinder of radius 3 cm and height 0.7 cm (The increase in volume is due to air being trapped in the biscuit) Biscuits are packed in a cylindrical card box of height 14 cm . The arrangement of biscuits is shown below



On the basis of the above information, answer any four of the following questions:

What is the volume of the biscuits after it is cooked ?

- A. 17.8 cu cm
- B. 18.7 cu cm
- C. 19.8 cu cm
- D. 21.2 cu cm

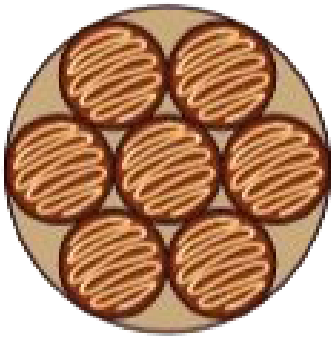
Answer: B

 [View Text Solution](#)

221. A bakery is an establishment that produces and sells flour-based food baked in an oven such as bread, cookies, cakes, pastries, and pies. Some retail bakeries are also categorized as cafés, serving coffee and tea to customers who wish to consume the baked goods on the premises.



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On the basis of the above information, answer any four of the following questions:

What is the volume of air trapped, while cooking the biscuit ?

- A. 1.8 cu cm
- B. 0.7 cu cm
- C. 1.5 cu cm
- D. 3.2 cu cm

Answer: A

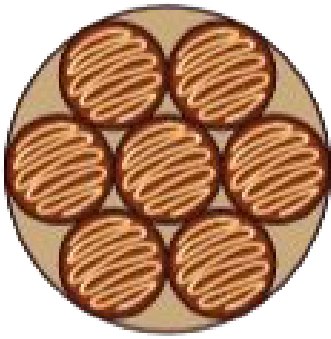


[View Text Solution](#)

222. A bakery is an establishment that produces and sells flour-based food baked in an oven such as bread, cookies, cakes, pastries, and pies. Some retail bakeries are also categorized as cafés, serving coffee and tea to customers who wish to consume the baked goods on the premises.



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On the basis of the above information, answer any four of the following questions:

How many biscuits will be there in a box ?

A. 120

B. 70

C. 140

D. 60

Answer: C

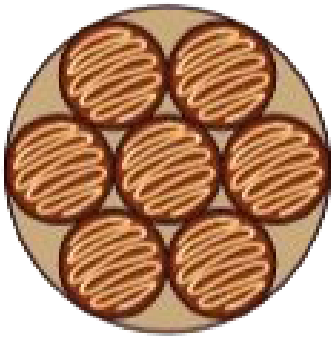


View Text Solution

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On the basis of the above information, answer any four of the following questions:

How much space is vacant in box after biscuits are packed ?

A. 940cm^3

B. 792cm^3

C. 846cm^3

D. 912cm^3

Answer: B

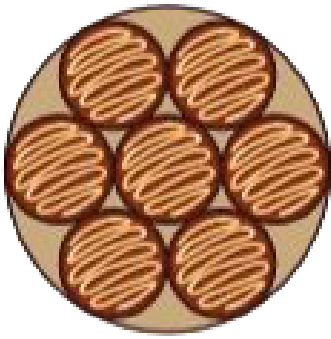


[View Text Solution](#)

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On the basis of the above information, answer any four of the following questions:

If weight of 7 biscuits is 50 grams, what will be the weight of box of biscuits?

- A. 750 grams
- B. 1.4 kg
- C. 900 gram
- D. 1 kg

Answer: D

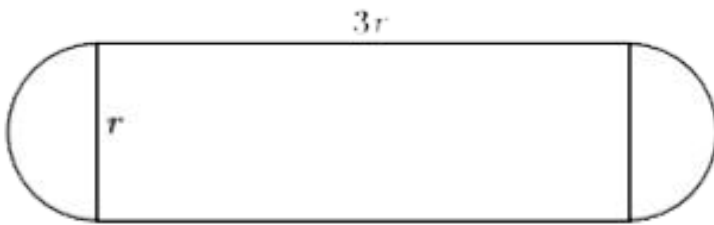


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225. The boiler is essentially a closed vessel inside which water is stored. Fuel (generally coal) is burnt in a furnace and hot gasses are produced. These hot gasses come in contact with water vessel where the heat of these hot gasses transfer to the water and consequently steam is produced in the boiler. Then this steam is piped to the turbine of thermal power plant. There are many different types of boiler utilized for different purposes like running a production unit, sanitizing some area, sterilizing equipment, to warm up the surroundings etc.



Rajesh has been given the task of designing a boiler for NTPC. Boiler consist of a cylindrical part in middle and two hemispherical part its both end. The cross section of boiler is given below. Length of cylindrical part is the 3 times of radius of hemispherical part.



On the basis of the above information, answer any four of the following questions:

Which of the following is correct expression for the surface area of cylindrical part of Boiler?

A. $2\pi r^2$

B. $6\pi r^2$

C. $4\pi r^2$

D. $8\pi r^2$

Answer: B

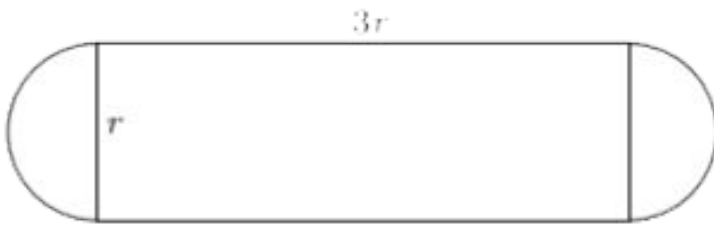


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On the basis of the above information, answer any four of the following questions:

Which of the following is correct expression for the total surface area of Boiler?

A. $\frac{22}{3}\pi r^2$

B. $\frac{11}{3}\pi r^2$

C. $6\pi r^2$

D. $10\pi r^2$

Answer: D

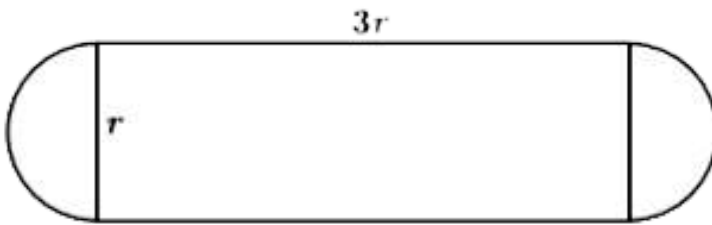


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On the basis of the above information, answer any four of the following questions:

Which of the following is correct expression for the volumes of Boiler?

A. $\frac{15}{4}\pi r^3$

B. $\frac{19}{3}\pi r^3$

C. $\frac{13}{3}\pi r^3$

D. $\frac{17}{4}\pi r^3$

Answer: C

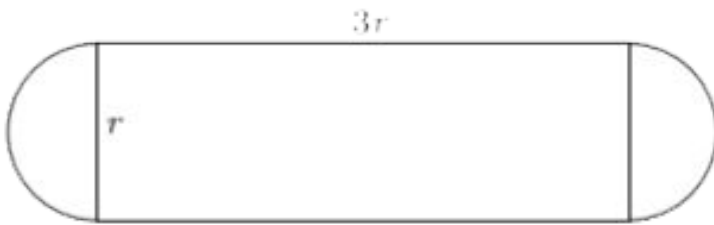
 [View Text Solution](#)

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On the basis of the above information, answer any four of the following questions:

What is the ratio of volume to the surface area?

- A. $\frac{13}{30}r$
- B. $\frac{3}{10}r$
- C. $\frac{10}{3}r$
- D. $\frac{3}{10}r$

Answer: A



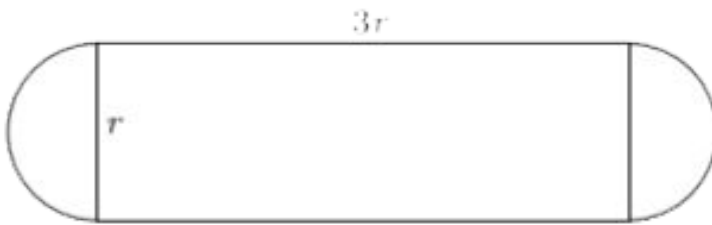
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On the basis of the above information, answer any four of the following questions:

If $m r = 3m$, what is the volume of Boiler?

A. $117\pi m^3$

B. $125\pi m^3$

C. $231\pi m^3$

D. $238\pi m^3$

Answer: A

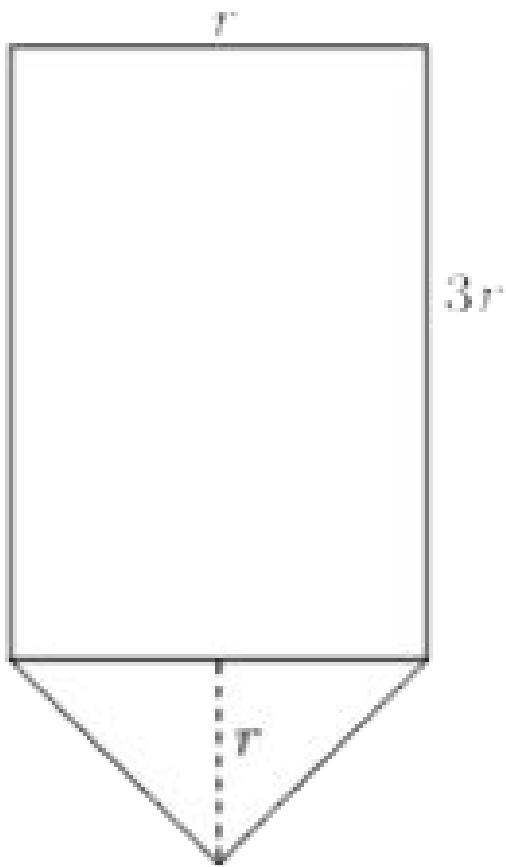
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230. The advantages of cone bottom tanks are found in nearly every industry, especially where getting every last drop from the tank is

important. This type of tank has excellent geometry for draining, especially with high solids content slurries as these cone tanks provide a better full-drain solution. The conical tank eliminates many of the problems that flat base tanks have as the base of the tank is sloped towards the centre giving the greatest possible full- drain system in vertical tank design.



Rajesh has been given the task of designing a conical bottom tank for his client. Height of conical part is equal to its radius. Length of cylindrical part is the 3 times of its radius. Tank is closed from top. The cross section of conical tank is given below.



On the basis of the above information, answer any four of the following questions:

If radius of cylindrical part is taken as 3 meter, what is the volume of above conical tank ?

A. $120\pi m^3$

B. $90\pi m^3$

C. $60\pi m^3$

D. $30\pi m^3$

Answer: B

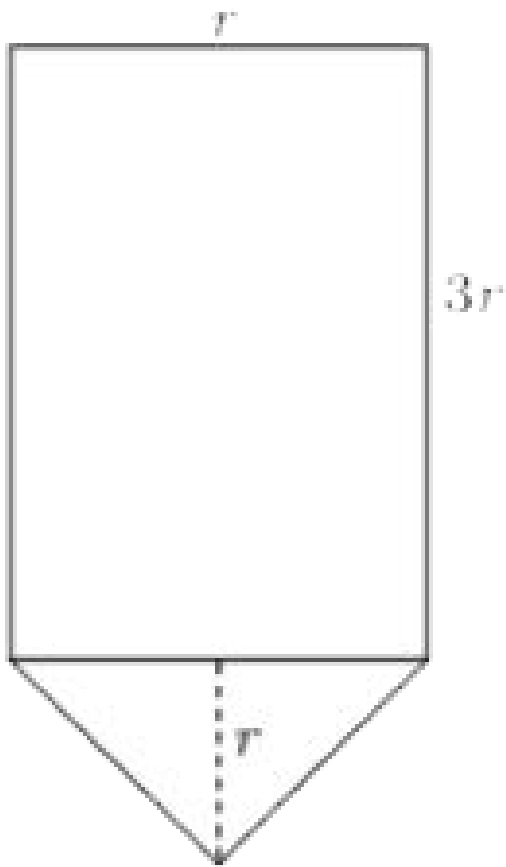


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On the basis of the above information, answer any four of the following questions:

What is the area of metal sheet used to make this conical tank ? Assume that tank is covered from top.

A. $27(7 + \sqrt{2})\pi$

B. $9(7 + \sqrt{2})\pi$

C. $27(5 + \sqrt{2})\pi$

D. $9(5 + \sqrt{2})\pi$

Answer: B

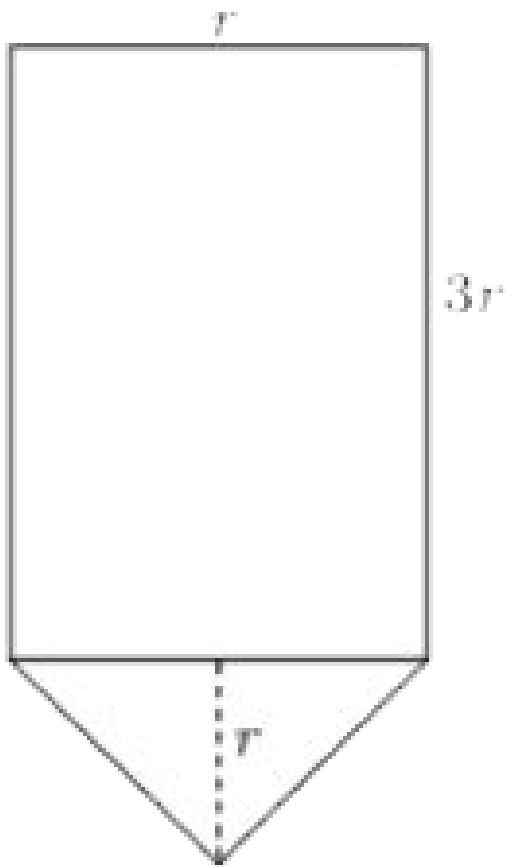


[View Text Solution](#)

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On the basis of the above information, answer any four of the following questions:

What is the ratio of volume of cylindrical part to the volume of conical part?

A. 6

B. 9

C. $\frac{1}{6}$

D. $\frac{1}{9}$

Answer: B

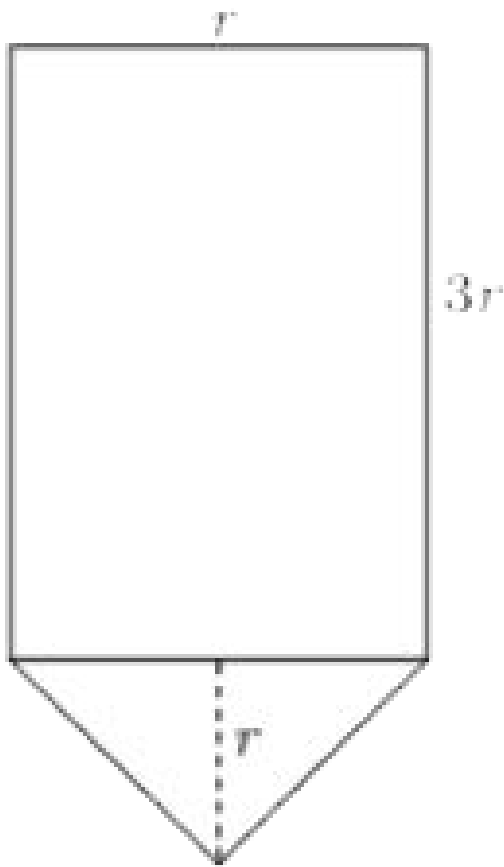


[View Text Solution](#)

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On the basis of the above information, answer any four of the following questions:

The cost of metal sheet is Rs 2000 per square meter and fabrication cost is 1000 per square meter. What is the total cost of tank ?

A. $27000(7 + \sqrt{2})\pi$

B. $54000(7 + \sqrt{2})\pi$

C. $27000(5 + \sqrt{2})\pi$

D. $54000(5 + \sqrt{2})\pi$

Answer: C

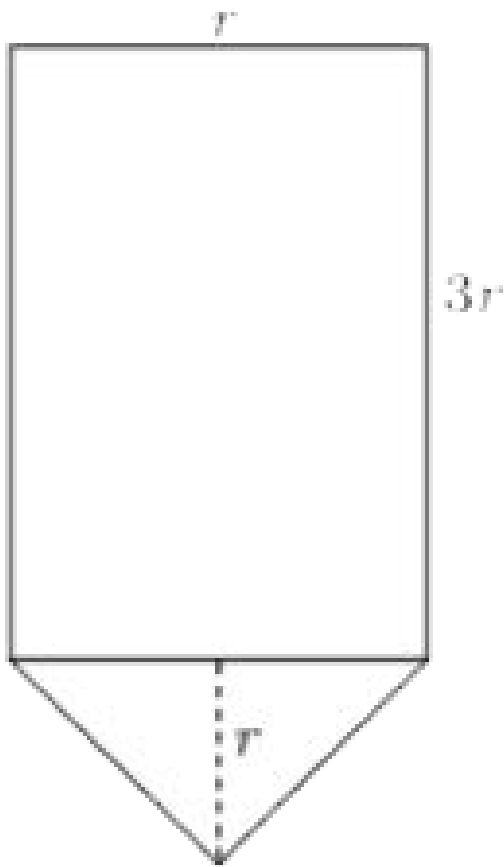


[View Text Solution](#)

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On the basis of the above information, answer any four of the following questions:

A oil is to be filled in the tank. The density of oil is 1050 kg per cubic meter. What is the weight of oil filled in tank ?

A. 195 Tonne

B. 200 Tonne

C. 297 Tonne

D. 174 Tonne

Answer: C



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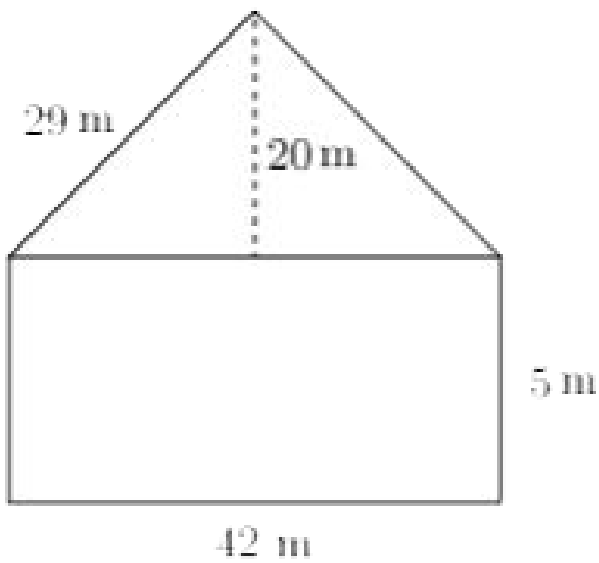
235. Kumbh Mela is a major pilgrimage and festival in Hinduism. It is celebrated in a cycle of approximately 12 years at four river-bank pilgrimage sites: the Prayagraj (Ganges-Yamuna Sarasvati rivers confluence), Haridwar (Ganges), Nashik (Godavari), and Ujjain (Shipra). The festival is marked by a ritual dip in the waters. The seekers believe that bathing in these rivers is a means to prayascitta for past mistakes, and that it cleanses them of their sins.



(i) Lower cylindrical part must have a white colored thick fabric whose cost is $Rs60$ per square meter.

(ii) Top conical part must have PVC coated blue fabric whose cost is $Rs70$ per square meter.

The front view section of tent is given below with dimension



How much white fabric is required ?

- A. 2640 sq. meter
- B. 1914 sq. meter
- C. 1320 sq. meter
- D. 3828 sq. meter

Answer: B



[View Text Solution](#)

236. Kumbh Mela is a major pilgrimage and festival in Hinduism. It is celebrated in a cycle of approximately 12 years at four river-bank pilgrimage sites: the Prayagraj (Ganges-Yamuna Sarasvati rivers confluence), Haridwar (Ganges), Nashik (Godavari), and Ujjain (Shipra). The festival is marked by a ritual dip in the waters. The seekers believe that bathing in these rivers is a means to prayascitta for past mistakes, and that it cleanses them of their sins.

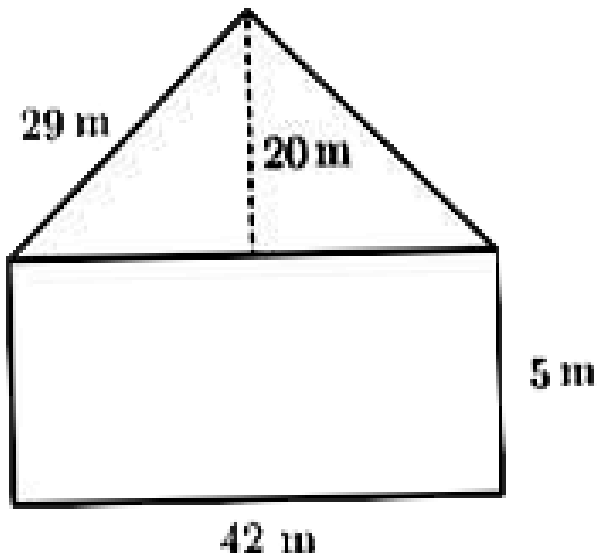




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(ii) Top conical part must have PVC coated blue fabric whose cost is $Rs70$ per square meter.

The front view section of tent is given below with dimension



How much blue PVC coated fabric is required?

- A. 1320 sq. meter
- B. 330 sq. meter
- C. 660 sq. meter
- D. 240 sq. meter

Answer: C



[View Text Solution](#)

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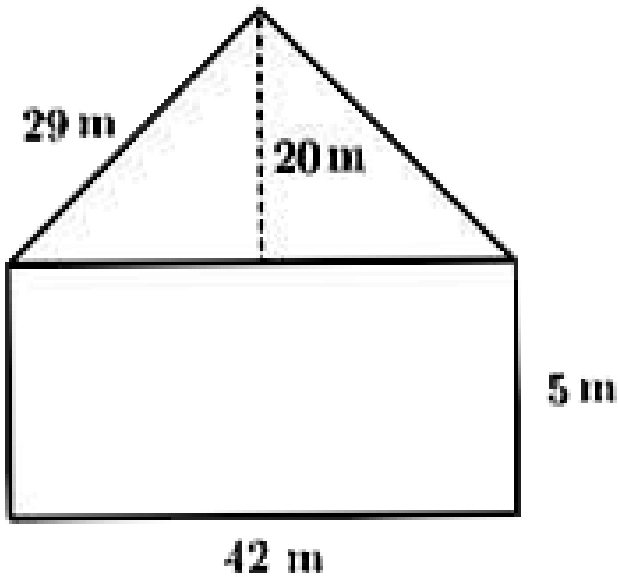




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(ii) Top conical part must have PVC coated blue fabric whose cost is $Rs70$ per square meter.

The front view section of tent is given below with dimension



If labour charge for the construction of tent is ` 15 per sq. meter what is the total cost of tent ?

- A. Rs 243100
- B. Rs 129800
- C. Rs 199650
- D. Rs 243800

Answer: C

[View Text Solution](#)

238. Kumbh Mela is a major pilgrimage and festival in Hinduism. It is celebrated in a cycle of approximately 12 years at four river-bank pilgrimage sites: the Prayagraj (Ganges-Yamuna Sarasvati rivers confluence), Haridwar (Ganges), Nashik (Godavari), and Ujjain (Shipra). The festival is marked by a ritual dip in the waters. The seekers believe that bathing in these rivers is a means to prayascitta for past mistakes, and that it cleanses them of their sins.

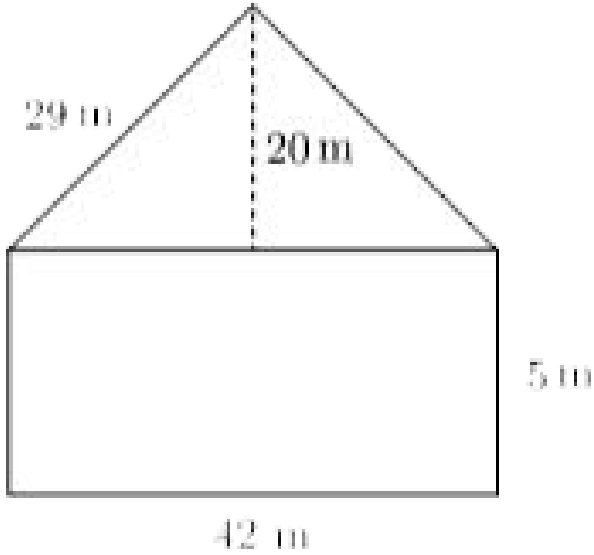




(i) Lower cylindrical part must have a white colored thick fabric whose cost is $Rs60$ per square meter.

(ii) Top conical part must have PVC coated blue fabric whose cost is $Rs70$ per square meter.

The front view section of tent is given below with dimension



If space requirement of a pilgrims is 6 sq. meter, how many pilgrims can be accommodate in a tent?

- A. 142
- B. 231
- C. 196
- D. 346

Answer: B



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239. Kumbh Mela is a major pilgrimage and festival in Hinduism. It is celebrated in a cycle of approximately 12 years at four river-bank pilgrimage sites: the Prayagraj (Ganges-Yamuna Sarasvati rivers confluence), Haridwar (Ganges), Nashik (Godavari), and Ujjain (Shipra). The festival is marked by a ritual dip in the waters. The seekers believe that bathing in these rivers is a means to prayascitta for past mistakes, and that it cleanses them of their sins.

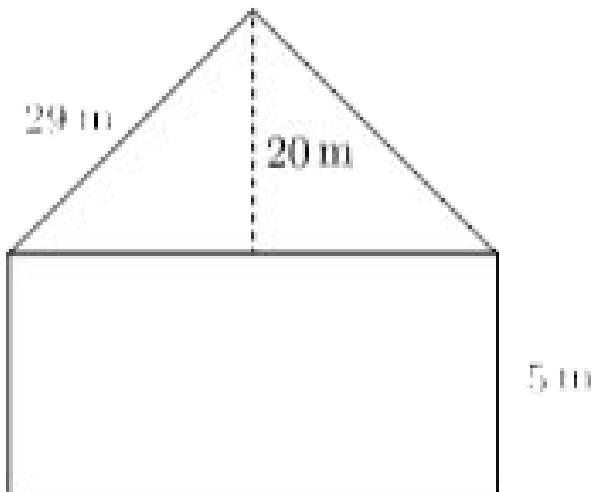




(i) Lower cylindrical part must have a white colored thick fabric whose cost is $Rs60$ per square meter.

(ii) Top conical part must have PVC coated blue fabric whose cost is $Rs70$ per square meter.

The front view section of tent is given below with dimension



If total 50000 pilgrims are expected to visit fair, how many tents are required ?

A. 198 tent

B. 217 tent

C. 179 tent

D. 292 tent

Answer: B



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