MATHS

BOOKS - EDUCART PUBLICATION

SAMPLE PAPER - 11

Section A

1. What will be one of the zeroes of $p(x) = ax^2 + bx + c$ if $a + c = b$?

A. 3

B. 0

C. 1

D. -1

Answer:

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2. How many number of solutions are there for the following pair of linear equation?

$$x - 2y + 4 = 0 \text{ and } 3x + 4y + 2 = 0$$

A. Unique

B. Infinite

C. No solution

D. Two solution

Answer:

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3. The total number of students in class X are 54, out of which there are 32 girls and rest are boys. The class teacher has to select one class representative. She writes the name of each student on a separate card and put the cards in

one bag. She randomly draw one card from the bag. What is the probability that the name written on card is of a girl?

A. $\dfrac{7}{27}$

B. $\dfrac{11}{27}$

C. $\dfrac{16}{27}$

D. $\dfrac{4}{27}$

Answer:

4. If $2x + 3y = 5$ and $3x + 2y = 10$, then what is the value of x-y?

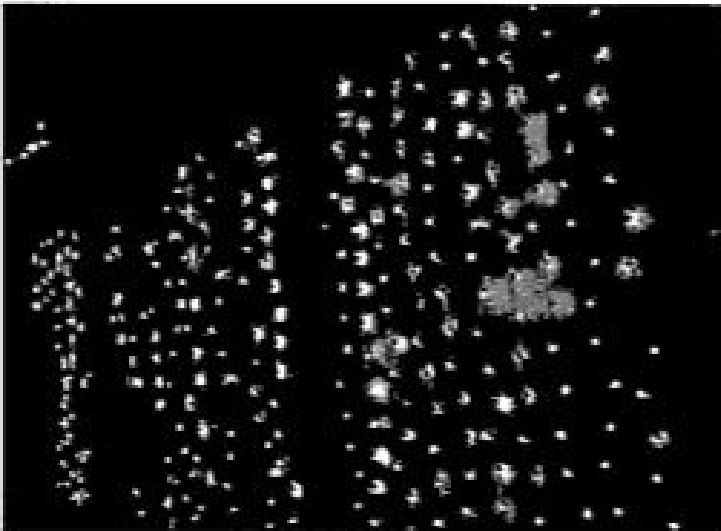   A. 3

   B. 4

   C. 5

   D. 6

Answer:

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5. Kavita decorated her home beautifully with lights on Diwali. She had three strings of blinking lights with different light colours. The lights of first string remain off for 3 seconds, the second string for 5 seconds and the third string for 6 seconds.

The time interval after which lights of the three

strings will glow again after switching them on at the same time is:

A. 10 seconds

B. 30 seconds

C. 60 seconds

D. 90 seconds

Answer:

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6. For any event E, if P(E) = 1, the E is called a:

A. Equally likely event

B. Impossible event

C. Sure event

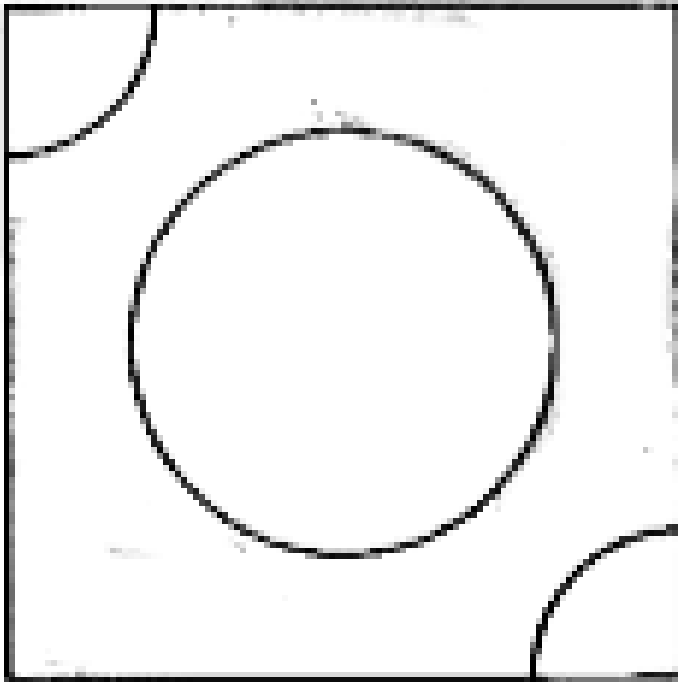D. Mutually exclusive event

Answer:

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7. From a square of side 8 cm, two quadrants of a

circle of radii 1.4 cm are cut from two corners.

Another circle of radius 4.2 cm is also cut from

the centre as shown in the figure. Find the area

of the remaining (shaded) portion of the square.

[Take $\pi = \dfrac{22}{7}$]

A. $6.12 cm^2$
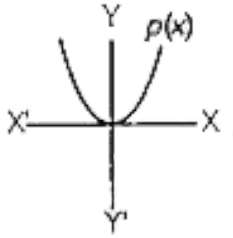
B. $5.48 cm^2$

C. $5.76cm^2$

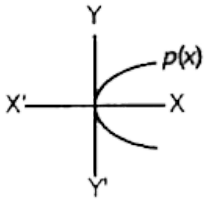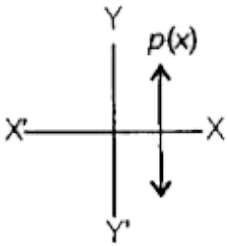D. $6.45cm^2$

Answer:

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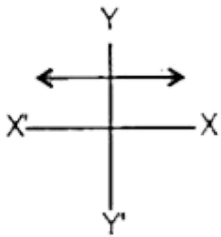**8.** The graphs of $y = p(x)$ are given in figure below. Which among the following shows that $p(x)$ has no zero ?

A.

B.

C.

D.

Answer:

9. If the points A(1,2) , B(0,0) and C (a,b) are collinear , then

    A. $a = 2b$

    B. $2a = b$

    C. $a = b$

    D. $a = 3b$

Answer:

10. Polynomial $f(x) = x^2 - 5x + k$ has zeroes a and β such that $\alpha - \beta = 1$, then find the value of 4k.

A. 6

B. 12

C. 18

D. 24

Answer:

11. If the points $A(4, 3) and B(x, 5)$ are on the circle with centre $O(2, 3)$, find the value of x.

A. 3

B. 2

C. 1

D. 0

Answer:

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12. What are the coordinates of the point, which divides the join of the points (5,0) and (0,4 in the ratio 2:3 internally?

A. $(8, -3)$

B. $(6, 5)$

C. $\left(3, \dfrac{8}{5}\right)$

D. $\left(\dfrac{5}{2}, 2\right)$

Answer:

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13. The events which have equal chances occuring and no one is preferred over th other are called events:

    A. Complementary

    B. Probable

    C. Equally likely

    D. Most likely

Answer:

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14. If the graph would be parallel to x-axis, the its number of zeros for the graph would be:

A. 0

B. 1

C. more than 1

D. 2

Answer:

15. Calculate the distance between the point $P(O, 6)$ and $Q(0, -2)$.

A. 8 units

B. 10 units

C. 6 units

D. 4 units

Answer:

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16. The HCF of two numbers is 9 and their LCM 2016. If one number is 54, then find the oth number?

A. 386

B. 336

C. 428

D. 328

Answer:

17. In what ratio does x-axis divides the join $A(2, -3)$ and $B(5, 6)$?

    A. $1:1$

    B. $2:1$
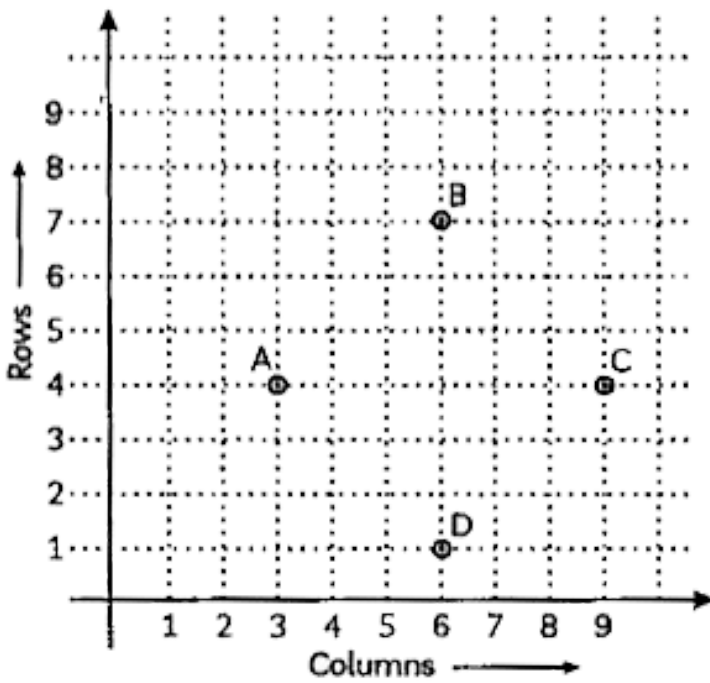
    C. $1:2$

    D. $1:3$

Answer:

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18. What name is given to a largest positive integer that divides given two positive integers?

Section B

1. In a playground, 4 friends are standing at the points A, B, C and D as shown in given figure, to play a game.

The distance AB is:

A. $\sqrt{3}$ units

B. $2\sqrt{3}$ units

C. 6 units

D. $3\sqrt{2}$ units

Answer:

2. Evaluate $\alpha\beta$, if α and β are the zeroes of the polynomial $x^2 + 5x + 8$.

A. 4

B. -5

C. 16

D. None of these

Answer:

3. The decimal representation of $\dfrac{17}{8}$ will be.

A. Terminating

B. Non-terminating

C. Non-terminating and repeating

D. Non-terminating and non-repeating

Answer:

4. In a given fraction, if 1 subtracted from the numberator and 2 is added to the denominator, it becomes $\dfrac{1}{2}$. If 7 is subtracted from the numerator and 2 is subtracted from the denominator, it becomes $\dfrac{1}{3}$. The fraction is

A. $\dfrac{23}{27}$

B. $\dfrac{1}{5}$

C. $\dfrac{15}{26}$

D. $\dfrac{13}{27}$

Answer:

5. Which one of the following is an irrational number.

A. $\sqrt{4}$

B. $3\sqrt{8}$

C. $\sqrt{100}$

D. $-\sqrt{0.64}$

Answer:

6. Evaluate

$\sin^2\theta - \cos^2\theta$. If $\sqrt{3}\tan\theta = 3\sin\theta, \theta \neq 0$ and θ

is an acute angle.

A. 1

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

C. $-\dfrac{1}{3}$

D. -1

Answer:

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7. What is the value of k in the quadratic polynomial $kx^2 + 4x + 3k$, if the sum of the zeroes is equal to their product ?

A. $\dfrac{-4}{3}$

B. $\dfrac{2}{3}$

C. $\dfrac{1}{0}$

D. -5

Answer:

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8. Aruna has only Rs. 1 and Rs. 2 coins with her. If the total number of coins that she has is 50 and the amount of money with her is Rs. 75, then the number of Rs. 1 and Rs. 2 coins are, respectively

A. 10

B. 20

C. 22

D. 25

Answer: D

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9. In the given figure, diameter AB is 12 cm long. AB is trisected at points P and Q. Find the area of shaded region

A. $14\pi cm^2$

B. $12\pi cm^2$

C. $22\pi cm^2$

D. $13\pi cm^2$

Answer:

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10. What is the decimal representation of $\dfrac{17}{125}$?

A. 0.136

B. 0.017

C. 0.125

D. 0.163

Answer:

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11. At what point, does the linear equation $y - 2x = 1$ intersect the y-axis?

A. $(0, 1)$

B. $\left(-\dfrac{1}{2}, 0 \right)$

C. $\left(0, \dfrac{14}{5} \right)$

D. $(0, -14)$

Answer:

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12. H.C.F. of 84, 63 and 42 is

A. 9

B. 21

C. 7

D. 42

Answer: B

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13. It is given that the difference between the zeros of $4x^2 - 8kx + 9$ is 4 and $k > 0$. Then, k = ?

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

B. $\dfrac{3}{2}$

C. $\dfrac{5}{2}$

D. $\dfrac{1}{2}$

Answer:

14. A game of chance consists of spinning an arrow, which comes to rest pointing at one of the numbers 1,2,3,4,5,6,7,8 and these are equally likely outcomes. Find the probability that the arrow will point at any factor of 8.
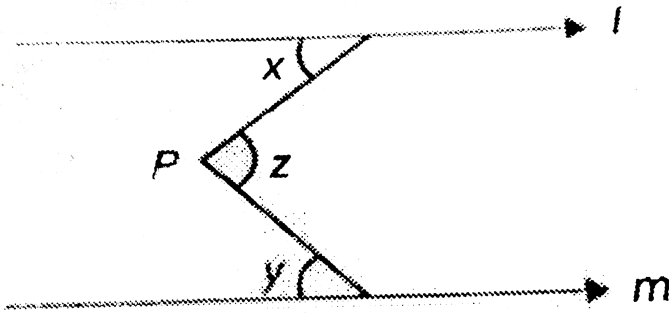
A. $\dfrac{5}{8}$

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

C. $\dfrac{1}{7}$

D. $\dfrac{1}{8}$

Answer:

15.

In the given figure, find the values of z, if x is two-third of y which is a complement of $45°$.

A. Linear polynomial

B. Quadratic polynomial

C. Cubic polynomial

D. None of these

Answer:

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16. 250 lottery tickets were sold and there are 5 prizes on these tickets. If kunal has purchased one lottery ticket, what is the probability that he wins a prize?

A. $\dfrac{1}{25}$

B. $\dfrac{1}{50}$

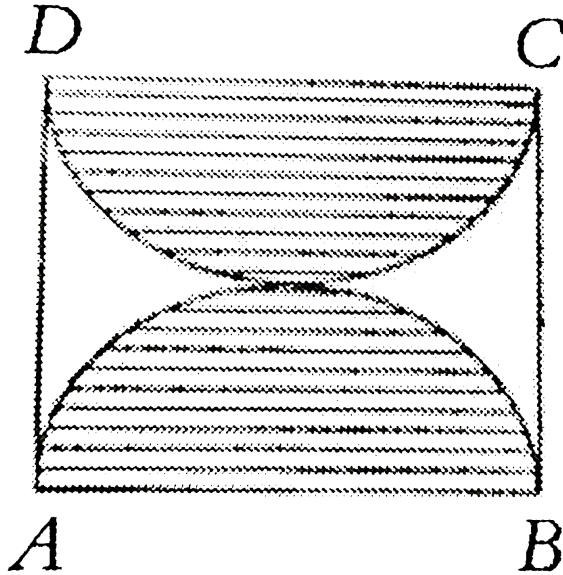C. $\dfrac{3}{17}$

D. $\dfrac{2}{25}$

Answer:

17. In the adjoining figure, ABCD is a square of side 7 cm and two semicircles are drawn inside of it with AB and CD as diameters. Find the area of

the shaded region (in cm^2).

A. $10.5cm^2$
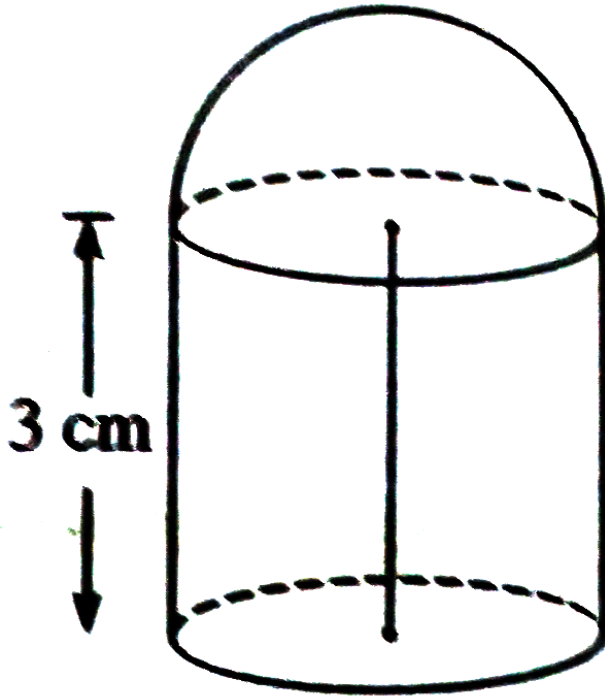
B. $11.7cm^2$

C. $7.7cm^2$

D. $22cm^2$

Answer:

Section C

1. The lower part of the metallic container is right circular cylinder and its lid is hemispherical. The volume of the cylinder is $942cm^3$ and height is 3 cm. The diameter of the cylinder and the hemisphere is same. Find the area of the sheet

for preparing the container. $(\pi = 3.14)$

A. $\dfrac{2}{1}$

B. $\dfrac{3}{2}$

C. $\dfrac{4}{3}$

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

Answer:

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2. Google maps cartography team is working on improving the scalability quality of maps when you use the app on your phones to zoom in using 4 fingers. They are using a proprietary tool called "MapMaker' to figure out scalability factors. A mathematical model is created for a type of object (below cross-section) to test its scalability on maps app.

In the diagram, $AC = 8cm$, $CE = 4cm$ and the area of the triangle BEC is 4.2 sq cm. Another enlargement with centre E, maps $\triangle EBC$ onto $\triangle EFA$, $BC = 3.6cm$
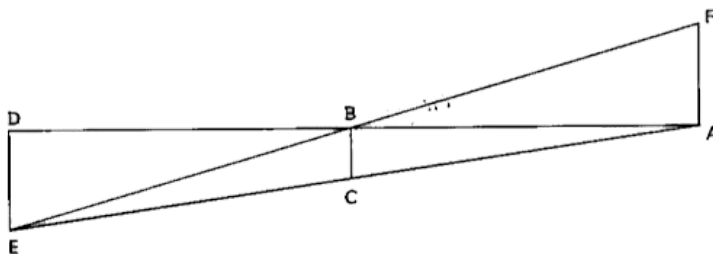
The area of $\triangle ABC$ is:
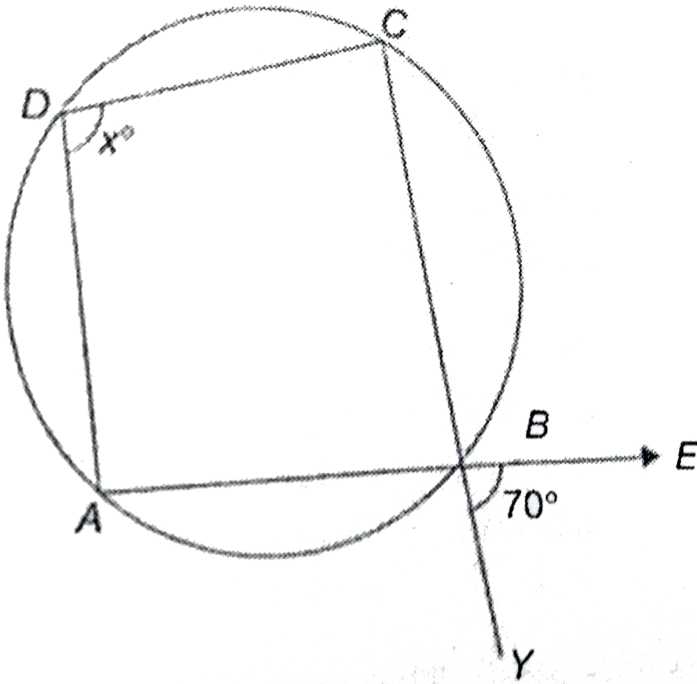
A. $4.2 sqcm$

B. $6.3 sqcm$

C. $8.4 sqcm$

D. $12.6 sqcm$

Answer:

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3. In the figure ,find the value of x.

A. $7.2cm$

B. $8.4cm$

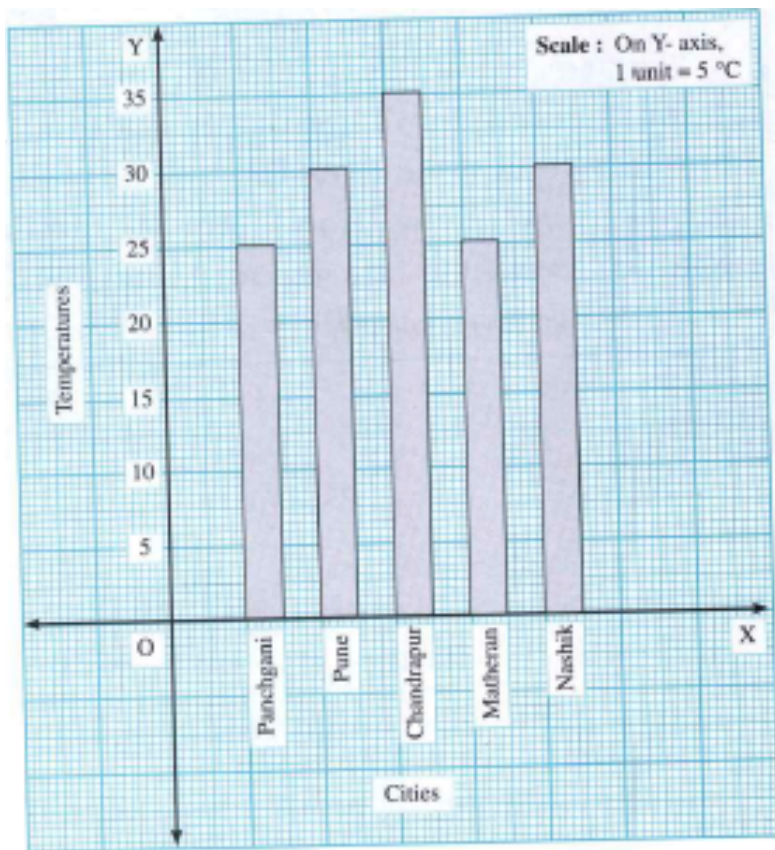C. $10.2cm$

D. $10.8 cm$

Answer:

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4. This bar graph shows the temperatures in degree Celsius in different cities on a certain day in February. Observe the graph and answer the questions :

What data is shown on the vertical and the

horizontal lines ? `

Scale : On Y- axis,
1 unit = 5 °C

A. 8.4sqcm

B. 16.8sqcm

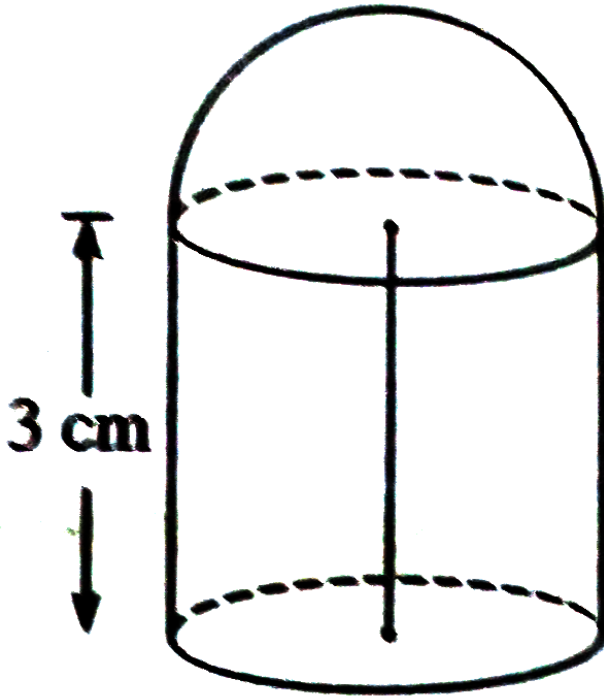C. 25.2sqcm

D. $37.8 sqcm 45$

Answer:

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5. The lower part of the metallic container is right circular cylinder and its lid is hemispherical. The volume of the cylinder is $942cm^3$ and height is 3 cm. The diameter of the cylinder and the hemisphere is same. Find the area of the sheet

for preparing the container. $(\pi = 3.14)$

A. 8.4sqcm

B. 16.8sqcm

C. 25.2sqcm

D. 37.8sqcm45

Answer:

6. Three containers C_1, C_2 and C_3 have water at different temperatures. The table below shows the final temperature T when different amounts water (given in liters) are taken from each container and mixed (assume no loss of heat during the process)

C_1	C_2	C_3	T
$1l$	$2l$	$--$	$60°C$
$--$	$1l$	$2l$	$30°C$
$2l$	$--$	$1l$	$60°C$
$1l$	$1l$	$1l$	θ

The value of θ (in $.° C$ to the nearest integer) is --

A. $\dfrac{12}{13}$

B. $\dfrac{13}{12}$

C. $\dfrac{13}{5}$

D. $\dfrac{5}{13}$

Answer:

7. In $\triangle ABC$, right angled at B, $AB = 3$, $BC = 4$ and $CA = 5$. Then value of $\tan^2 C + 1$ is:

A. $\dfrac{12}{9}$

B. $\dfrac{9}{12}$

C. $\dfrac{25}{16}$

D. $\dfrac{15}{9}$

Answer:

8. In $\triangle ABC$, right angled at B, $AB = 3$, $BC = 4$ and $CA = 5$. Then value of $\sec^2 A + \cos ec^2 A$ is:

9. In $\triangle ABC$, right angled at B, $AB = 3$, $BC = 4$ and $CA = 5$. Then value of

$\sin^2 A + \cos^2 A$ is:

A. 0

B. -1

C. 1

D. $\dfrac{1}{4}$

Answer:

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10. In $\triangle ABC$, right angled at B, $AB = 3$, $BC = 4$ and $CA = 5$. Then value of $\cot^2 C$ is: