MATHS

BOOKS - EDUCART PUBLICATION

SAMPLE PAPER 10 (SELF-ASSESSMENT)

Section A

1. The ratio of HCF and LCM of numbers 28 and 32 is

A. $4:27$

B. $1:56$

C. $56:1$

D. $27:4$

Answer:

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2. It is given that in a group of 3 students, the probability of 2 students not having the same birthday is 0.992. What is the probability that the 2 students have the same birthday?

A. 0.001

B. 0.008

C. 0.007

D. 0.006

Answer:

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3. What is the length of side AC in ΔABC, which is right angled at B if BC=5cm and $\angle BAC = 30^\circ$?

A. 5cm

B. 15cm

C. 10cm

D. 7cm

Answer:

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4. Consider an isoceles right angled triangle ΔABC at C, then AB^2= ....times AC^2.

A. 1

B. 2

C. 3

D. 4

Answer:

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5. If the zeroes of the polynomial $x^2 - 2kx + 2$ are equal in magnitude but opposite in sign, then the vaue of k is

A. 0

B. 1

C. 2

D. 3

Answer:

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6. The distance of the point $P(3, -4)$ from the origin is

A. 3 units

B. 4 units

C. 5units

D. 6 units

Answer:

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7. Evaluate the approximate area covered by hour hand in 1 hour, where the length of hour hand of a clock is 7cm.

A. $9cm^2$

B. $11cm^2$

C. $13cm^2$

D. $15cm^2$

Answer:

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8. Find the value of y, from the equations $x - y = 0.9$ and $\frac{11}{x + y} = 2.$

A. 1.2

B. 2.1

C. 3.2

D. 2.3

Answer:

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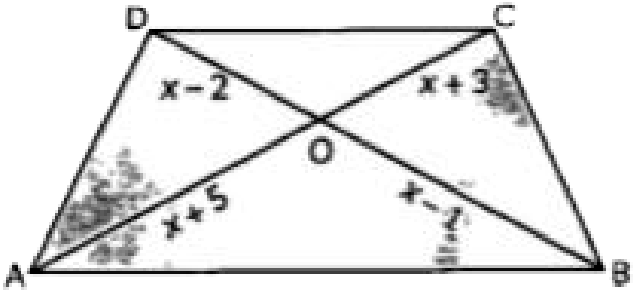
9. Evaluate for x, if, $AB \mid\mid DC$ in the given figure.



A. 6

B. 7

C. 8

D. 4

Answer:

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10. What is the area of a square inscribed in a circle of diameter x cm?

A. $\frac{p^2}{2}cm^2$

B. p^2cm^2

C. $\frac{\pi p^2}{2}cm^2$

D. πp^2cm^2

Answer:

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11. The HCF of co-prime numbers 17 and 43 is

A. 7

B. 6

C. 1

D. 3

Answer:

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12. In ΔABC, D and E are points on sides AB and AC respectively such that $DE \| BC$. If AE=1.8cm, BD= 7.2cm and CE= 5.4cm, then the length of AD is

A. 3.6cm

B. 2.8cm

C. 2.4cm

D. 1.8cm

Answer:

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13. If α and β are the zeroes of a polynomial $x^2 - 3x - 4$, then the polynomial whose zeroes are $(\alpha + \beta)$ and $\alpha\beta$ is:

A. $x^2 - x + 12$

B. $x^2 + x - 12$

C. $x^2 - x - 12$

D. $x^2 + x + 12$

Answer:

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14. What is the probability of getting a consonant, when a letter of English alphabet is chosen at random?

A. $\frac{5}{26}$

B. $\frac{21}{26}$

C. $\frac{19}{26}$

D. $\frac{17}{26}$

Answer:

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15. If AD is a median of ΔABC with vertices $A(5, -7), B(4, 7)$ and $C(6, -5)$ then what are the coordinate of D?

A. (5,1)

B. $(-1, 1)$

C. $(-5, 1)$

D. (1,1)

Answer:

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16. Write the value of k for which the system of equations $2x - y = 5, \quad 6x + ky = 15$ has infinitely many solutions.

A. 8

B. -3

C. 3

D. 6

Answer:

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17. A situation is given. Represent it in the form of linear equations. 5 books and 7 pens together cost Rs 79 whereas

7 books and 5 pens together cost Rs 77. Here consider cost of each book as Rs x and that of each pen as Rs y.

A. $17x + 7y = 79, 5x + 5y = 77$

B. $5x + 7y = 79, 7x + 5y = 77$

C. $5x + 5y = 79, 7x + 7y = 77$

D. Data insufficient

Answer:

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18. Given two triangles ABC and DEF such that $\Delta ABC \sim \Delta DEF$. Also,

$ar(\Delta ABC) = 25cm^2, ar(\Delta DEF) = 64cm^2$ and $AB = 5cm$

. Then length of side DE is

A. 8cm

B. 10cm

C. 4cm

D. 12cm

Answer:

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19. The product of $\left(3 + \sqrt{3}\right)$ and $\left(3 - \sqrt{5}\right)$ is

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20. $0x^2 + 2x - 5$ is an example of a:

A. cubic polynomial

B. bi-quadratic polynomial

C. linear polynomial

D. quadratic equation

Answer:

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Section B

1. A girl of height 90 cm is walking away from the base of a lamp-post at a speed of 1.2 m/s. If the lamp is 3.6 m above

the ground, find the length of her shadow after 4 seconds.

A. 1.6m

B. 1.5m

C. 3m

D. 2m

Answer:

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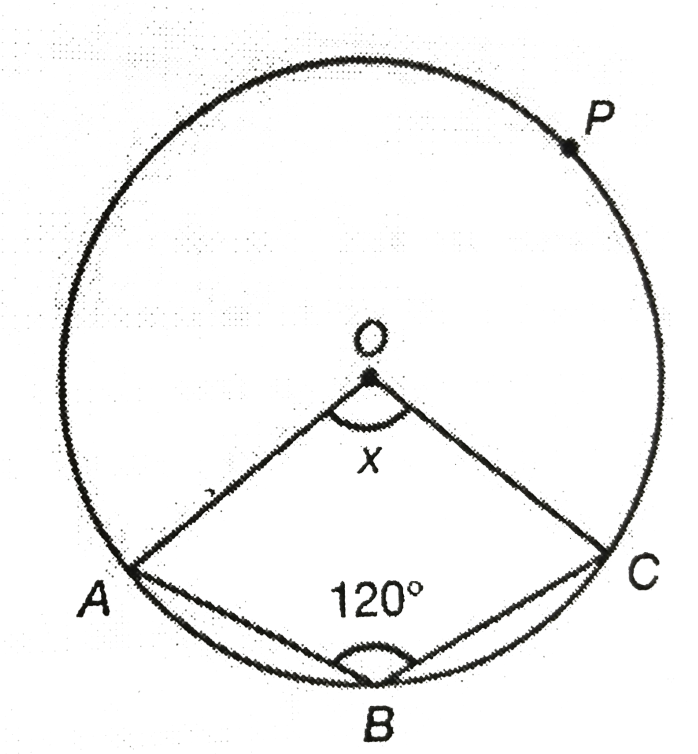
2. In fig. O is the center of the circle. Find the value of x.



A. $(s, a + t)$

B. $(a, s + t)$

C. $(a + s, t)$

D. $(s + t, a)$

Answer:

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3. If $\alpha and \beta$ ar the zeros of the polynomial $f(x) = x^2 - 5x + k$ such that $\alpha - \beta = 1,$ find the value of $k.$

A. 7

B. 6

C. 5

D. 4

Answer:

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4. For two linear equations $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$, then condition $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ is for

A. Unique solution

B. Infinite solutions

C. No solution

D. Data insufficient

Answer:

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5. Find the probability of getting the same number of two dice in a single throw of two dice.

A. $\frac{1}{36}$

B. $\frac{5}{36}$

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

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

Answer:

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6. Evaluate $\sin\theta.\cos\theta$, if $\sin\theta + \cos\theta = \sqrt{2}$.

A. $\sqrt{2}$

B. 1

C. 0

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

Answer:

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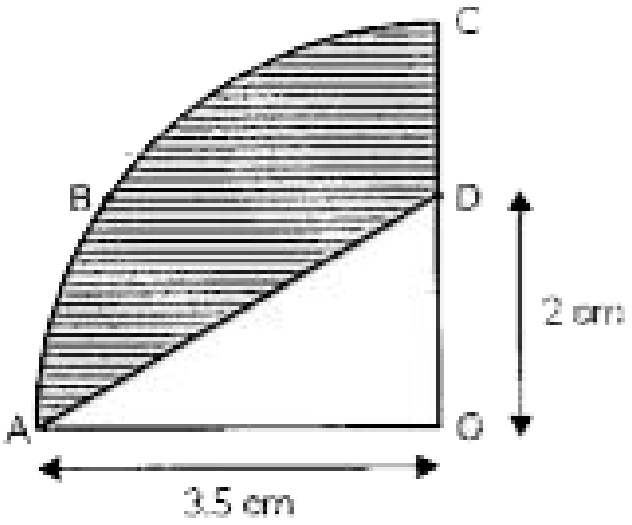
7. The area of shaded region in the given figure is



A. $6.125cm^2$

B. $5.5cm^2$

C. $2.625cm^2$

D. $12.25cm^2$

Answer:

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8. Which is the smallest number, which on dividing by 18, 24, 30 and 42 leaves remainder as 1?

A. 4221

B. 2521

C. 3862

D. 1221

Answer:

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9. The decimal expansion of $\frac{17}{125}$ is

A. 0.017

B. 0.136

C. 0.68

D. 4.25

Answer:

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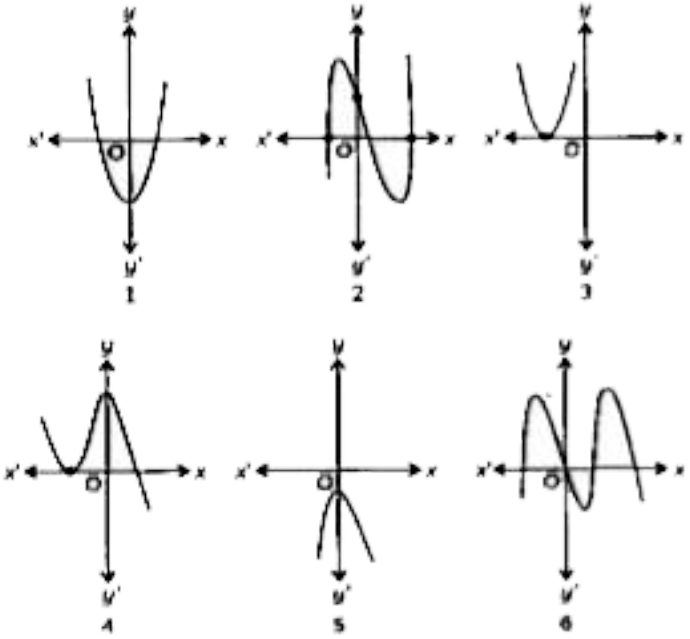
10. The graph of a polynomial function is a smooth continuous curve. By looking at graph, we can find the number of zeros of the polynomial. Graphs are the geometrical meaning of the polynomials. They help us to understand their type, nature of its zeroes and coefficients of its various terms.



Which of the above graph represents quadratic polynomials?

A. 1 and 3

B. 1, 3 and 5

C. only 5

D. only 6

Answer:

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11. If $a+b+c=0$ and A(a,b), B(b,c) and C(c,a) are vertices of ΔABC, then the coordinates of its centroid are:

A. $\left(\frac{a+b+c}{2}, \frac{a+b+c}{2}\right)$

B. $\left(\frac{a+b+c}{3}, \frac{a+b+c}{3}\right)$

C. (1,1)

D. (0,0)

Answer:

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12. A number is selected at random from the numbers 1 to 30. The probability that it is a prime number is $\frac{2}{3}$ (b) $\frac{1}{6}$ (c) $\frac{1}{3}$ (d) $\frac{11}{30}$

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

B. $\frac{2}{5}$

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

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

Answer:

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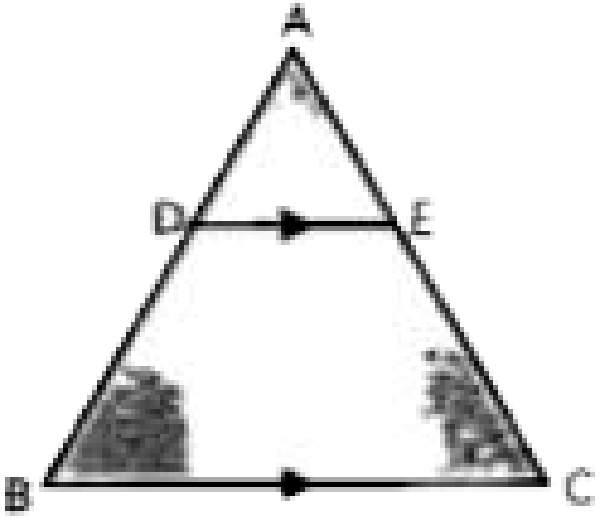
13. In the figure, $DE \| BC$. If AD=1cm and BD=2cm, then the ratio of areas of ΔADE and ΔABC is



A. $1:4$

B. $1:2$

C. $2:3$

D. $1:9$

Answer:

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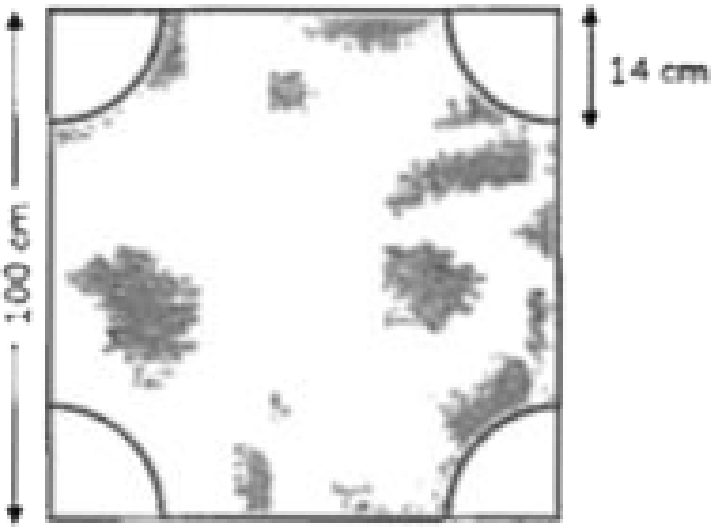
14. Find the ara of shaded region in the given figure in which the square is of side 100cm and quadrant of radius

14cm is formed at four corners.



A. $9384cm^2$

B. $8998cm^2$

C. $9212cm^2$

D. $9656cm^2$

Answer:

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15. One of the common solution of $ax + by = c$ and y axis is

A. (0,b)

B. $\left(0, \frac{c}{b}\right)$

C. $\left(0, \frac{a}{c}\right)$

D. (0,0)

Answer:

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16. The graphical representation of $x + 2y - 4 = 0$ and $2x + 4y - 12 = 0$ will be

A. coincident lines

B. parallel lines

C. intersecting lines

D. Data insufficient

Answer:

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17. Which of the following is an example of non-terminating decimal?

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

B. $\frac{9}{30}$

C. $\frac{4}{45}$

D. $\frac{1}{25}$

Answer:

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18. If x=2 is a zero of polynomial $ax^2 - bx + 2$, then what is the relation between a and b?

A. $2a - b + 1 = 0$

B. $a + b + 1 = 0$

C. $a - b + 1 = 0$

D. $7a - 5b + 1 = 0$

Answer:

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19. $\Delta ABC \sim \Delta PQR$. If AB= 4cm, BC=3cm, CA=7cm and PR=2cm, then the perimeter of ΔPQR is

A. 2cm

B. 4cm

C. 14cm

D. 7cm

Answer:

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20. If the HCF of 408 and 1032 is expressible in the form $1032\,m - 408 \times 5$, find m.

A. -10

B. -15

C. -5

D. 10

Answer:

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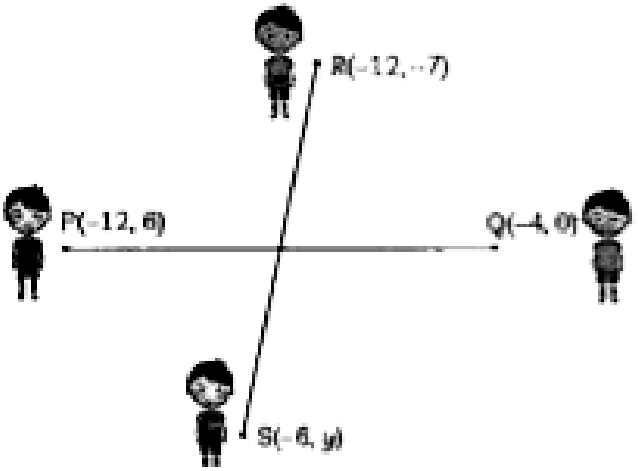
Section C Case Study Based Questions

1. Case Study-1

Four friends visited a nearby park to plya. They decided to play with the ball. So they get stood the four corners P, Q, R, S of the rectangulor park PQRS and started playing pass the ball.



If A is the mid-point of P and Q, then find the coordinates of A.

A. $(3, -8)$

B. $(2, -8)$

C. $(-8, 2)$

D. $(-8, 3)$

Answer:

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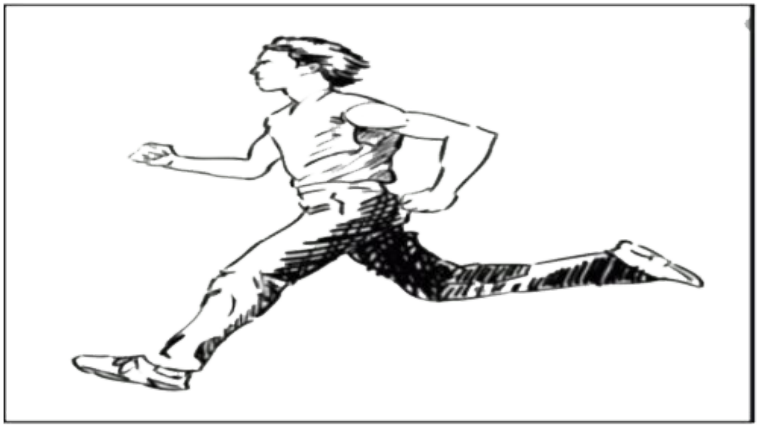
2. Your friend Veer wants to participate in a 200m race. He can currently run that distance in 51 seconds and with each day of practice it takes him 2 seconds less.He wants to do in 31 seconds .



If n^{th} term of an AP is given by $a_n = 2n + 3$ then common difference of an AP is

A. 5

B. 4

C. 3

D. 2

Answer:

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3. If $A(-9, 1)$ bisects the line segment joining $R(-12, -7)$ and $S(-6, y)$, then find y.

A. $(-6, 9)$

B. $(-6, 8)$

C. $(-6, 7)$

D. $(-6, 6)$

Answer:

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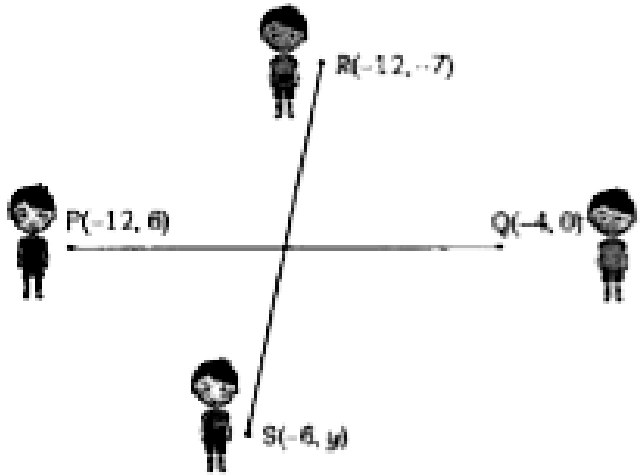
4. Case Study-1

Four friends visited a nearby park to play. They decided to

play with the ball. So they get stood the four corners P, Q, R, S of the rectangular park PQRS and started playing pass the ball.



Calculate the total distance between the points P and Q

A. 9 units

B. 10 units

C. 8 units

D. 7 units

Answer:

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5. What is the distance between the points $S(-6, -3)$ and $R(-12, -7)$?

A. $2\sqrt{29}$ units

B. $3\sqrt{29}$ units

C. $\sqrt{26}$ units

D. $2\sqrt{26}$ units

Answer:

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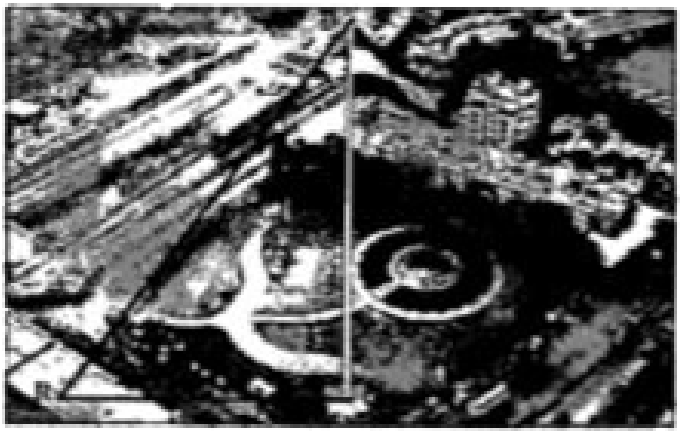
6. Locataed in Nigdi, the Bhakti Shakti flag was set up by the Pimpri Chinchwad Municipal Corporation (PCMC) in 2018. The approximately 105 metre high flagpole weighs 42 tonnes and the flag is made up of knitted polyester and the flag itself weighs 90kg and can sustain winds up to 25km per hour. The height of the flag is shown in the picture as PQ and the distance between the foot of the flagpole Q and a point R on the ground is 208m.



The value of cos R is

A. $\frac{105}{233}$

B. $\frac{105}{208}$

C. $\frac{208}{105}$

D. $\frac{208}{233}$

Answer:

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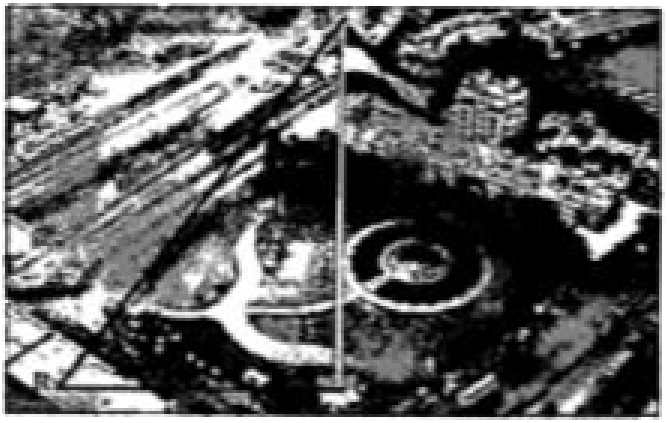
7. Locataed in Nigdi, the Bhakti Shakti flag was set up by the PCMC in 2018. The approximately 105 metre high flagpole and the flag is made up of knitted polyester. The height of the flagpole is PQ and the distance between the foot of the flagpole Q and a point R on the ground is 208m.



The value of sin P is

A. $\frac{208}{233}$

B. $\frac{105}{208}$

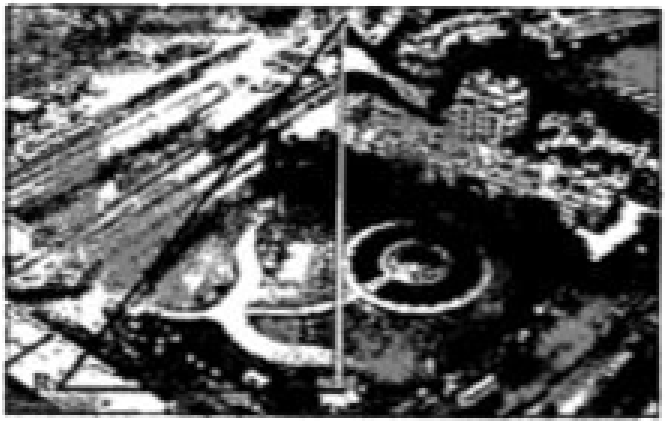
C. $\frac{208}{105}$

D. $\frac{105}{233}$

Answer:

Watch Video Solution

8. Locataed in Nigdi, the Bhakti Shakti flag was set up by the PCMC in 2018. The approximately 105 metre high flagpole and the flag is made up of knitted polyester. The height of the flagpole is PQ and the distance between the foot of the flagpole Q and a point R on the ground is 208m.



The value of $\operatorname{cosec} R$ is

A. $\frac{208}{233}$

B. $\frac{233}{105}$

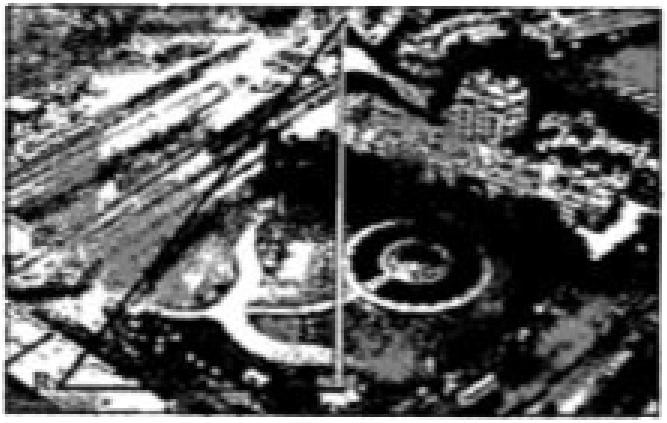
C. $\frac{208}{105}$

D. $\frac{105}{233}$

Answer:

Watch Video Solution

9. Locataed in Nigdi, the Bhakti Shakti flag was set up by the PCMC in 2018. The approximately 105 metre high flagpole and the flag is made up of knitted polyester. The height of the flagpole is PQ and the distance between the foot of the flagpole Q and a point R on the ground is 208m.



The value of $\tan^2 P - \sec^2 P$ is

A. 0

B. 1

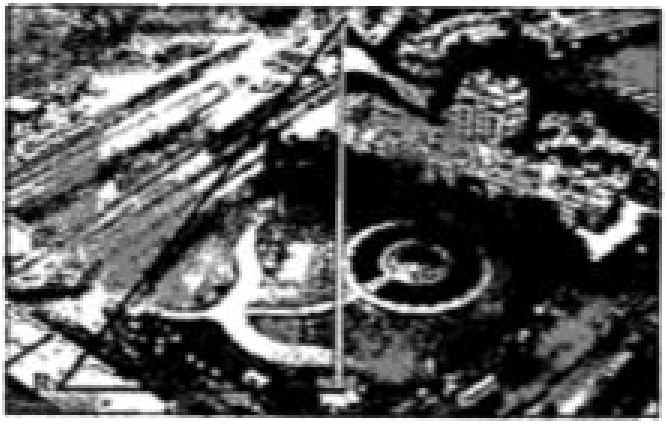
C. -1

D. 2

Answer:

Watch Video Solution

10. Locataed in Nigdi, the Bhakti Shakti flag was set up by the PCMC in 2018. The approximately 105 metre high flagpole and the flag is made up of knitted polyester. The height of the flagpole is PQ and the distance between the foot of the flagpole Q and a point R on the ground is 208m.



$\tan P - \cot R$ is

A. 1

B. 0

C. -1

D. 2

Answer:

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