MATHS

BOOKS - X BOARDS

QUESTION PAPER 2022 TERM 1 SET 2 STANDARD

Section A

1. IF HCF (39,91) = 13, then LCM (39, 91) is:

A. 91

B. 273

C. 39

D. 3549

Answer:

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2. $4.\overline{57}$ is a/an:

A. integer

B. rational number

C. natural number

D. irrational number

Answer:

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3. The line represented by 4x - 3y = 9 intersects the y-axis at:

A. $(0, -3)$

B. $\left(\frac{9}{4}, 0\right)$

C. $(-3, 0)$

D. $\left(0, \frac{9}{4}\right)$

Answer:

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4. The point on x-axis equidistant from the points P(5,0) and Q(-1,0) is:

A. (2,0)

B. (-2,0)

C. (3,0)

D. (2,2)

Answer:

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5. If ΔABC and ΔPQR are similar triangles such that $\angle A = 31^\circ$ and $\angle R = 69^\circ$, then $\angle Q$ is :

A. 70°

B. 100°

C. 90°

D. 80°

Answer:

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6. Given that $\cos\theta = \frac{\sqrt{3}}{2}$, then the value of $\frac{\cos ec^2\theta - \sec^2\theta}{\cos ec^2\theta + \sec^2\theta}$ is :

A. -1

B. 1

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

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

Answer:

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7. The area swept by 7 cm long minute hand of a clock in 10 minutes is :

A. $77cm^2$

B. $12\frac{5}{6}cm^2$

C. $7\frac{1}{12}cm^2$

D. $25\frac{2}{3}cm^2$

Answer:

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8. The probability of getting two heads when two fair coins are tossed together, is :

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

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

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

D. 1

Answer:

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9. Two positive numbers have their HCF as 12 and their product as 6336. The number of pairs possible for the numbers, is :

A. 2

B. 3

C. 4

D. 1

Answer:

10. The pair of equations y = 2 and y = - 3 has

A. one solution

B. two solutions

C. infinitely many solutions

D. no solutions

Answer:

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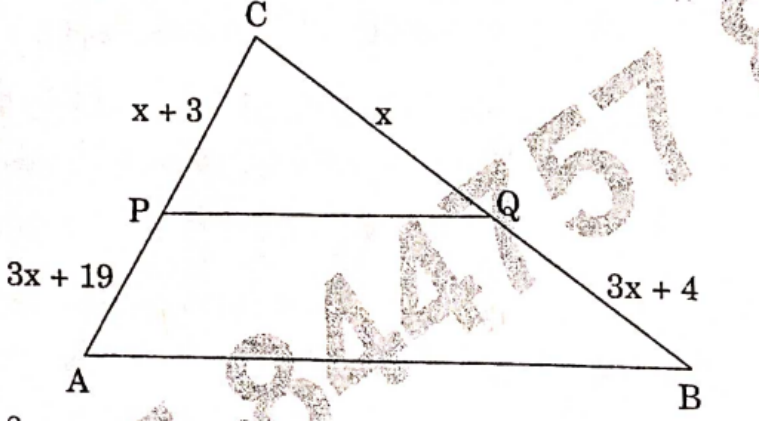
11. In the figure given below, what value of x will make $PQ \mid\mid AB$?



A. 2

B. 3

C. 4

D. 5

Answer:

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12. Given that $\sin\alpha = \frac{\sqrt{3}}{2}$ and $\tan\beta = \frac{1}{\sqrt{3}}$, then the value of $\cos(\alpha - \beta)$ is :

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

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

C. 0

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

Answer:

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13. In a single throw of a die, the probability of getting a composite number is :

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

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

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

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

Answer:

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14. The decimal expansion of the rational number $\frac{3177}{250}$ will terminate after

A. one decimal place

B. two decimal places

C. three decimal places

D. four decimal places

Answer:

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15. The pair of lines represented by the linear equations

$3x + 2y = 7$ and $4x + 8y - 11 = 0$ are

A. perpendicular

B. parallel

C. intersecting

D. coincident

Answer:

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16. In an equilateral triangle with length of side p, the length of the altitude is :

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

B. $\frac{\sqrt{3}}{4}p$

C. $\frac{\sqrt{3}}{2}p^2$

D. $\frac{\sqrt{3}}{4}p^2$

Answer:

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17. Given that $\sin\theta = \frac{p}{q}$ then $\tan\theta$ is equal to

A. $\frac{p}{\sqrt{p^2 - q^2}}$

B. $\frac{q}{\sqrt{p^2 - q^2}}$ s

C. $\frac{p}{\sqrt{q^2 - p^2}}$

D. $\frac{q}{\sqrt{q^2 - p^2}}$

Answer:

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18. A vertical pole of length 19m casts a shadow 57m long on the around and at the same time a tower casts a shadow 51m long. The height of the tower is :

A. 171m

B. 13m

C. 17m

D. 117m

Answer:

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19. The simplest form of $\sqrt{\left(1-\cos^2\theta\right)\left(1+\tan^2\theta\right)}$ is :

A. $\cos\theta$

B. $\sin\theta$

C. $\cot\theta$

D. $\tan\theta$

Answer:

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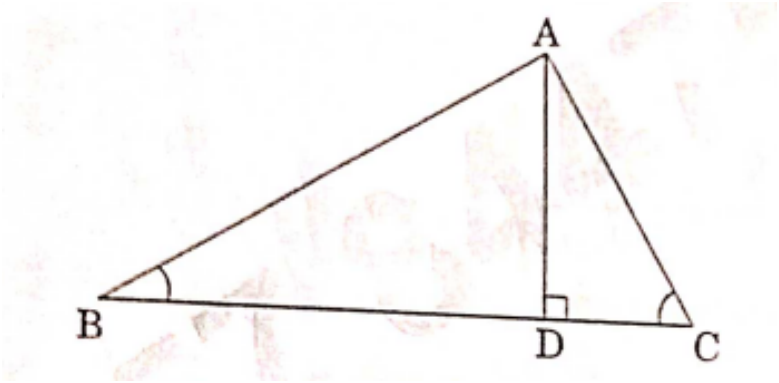
20. In the given figure, $\angle ABC$ and $\angle ACB$ are complementary to each other and $AD \perp BC$ then,



A. $BD.CD = BC^2$

B. $AB.BC = BC^2$

C. $BD.CD = AD^2$

D. $AB.\ AC = AD^2$

Answer:

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Section B

1. If one of the zeroes of the quadratic polynomial $(k-1)x^2 + kx + 1$ is -3 ,then the value of k is

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

B. $-\frac{4}{3}$

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

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

Answer:

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2. If the lengths of diagonals of a rhombus are 10cm and 24cm, then the perimeter of the rhombus is :

A. 13cm

B. 26cm

C. 39cm

D. 52cm

Answer:

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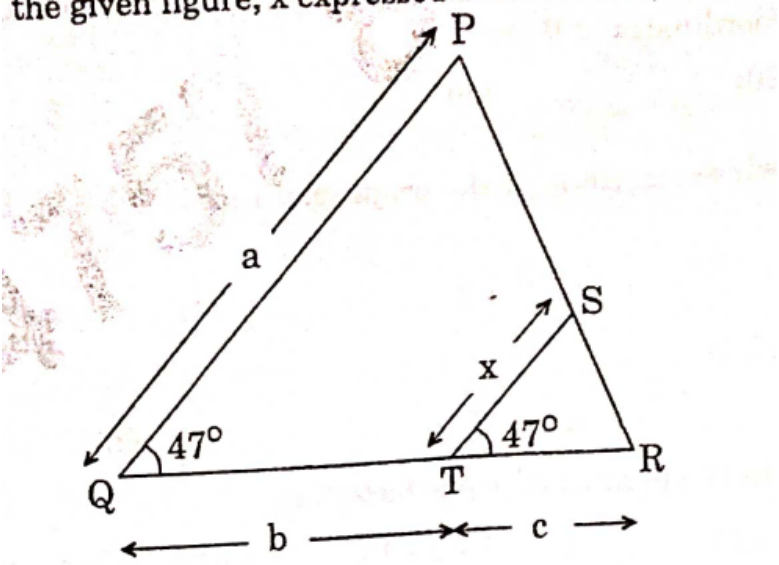
3. In the given figure, x expressed in terms of a, b, c, is :

the given figure, x expresse



A. $x = \dfrac{ab}{a+b}$

B. $x = \dfrac{ac}{b+c}$

C. $x = \dfrac{bc}{b+c}$

D. $x = \dfrac{ac}{a+c}$

Answer:

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4. $\frac{1}{\cos ec\theta(1-\cot\theta)}+\frac{1}{\sec\theta(1-\tan\theta)}$ is equal to :

A. 0

B. 1

C. $\sin\theta+\cos\theta$

D. $\sin\theta-\cos\theta$

Answer:

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5. If 'n' is any natural number, then $(12)^n$ cannot end with the digit:

A. 2

B. 4

C. 8

D. 0

Answer:

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6. A wire can be bent in the form of a circle of radius 56 cm. If the same wire is bent in the form of a square, then the area of the square will be :

A. 8800 cm^2

B. 7744 cm^2

C. 6400 cm^2

D. 3520 cm^2

Answer:

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7. The probability that a non-leap year has 53 Wednesdays, is :

A. $\frac{1}{7}$

B. $\frac{2}{7}$

C. $\frac{5}{7}$

D. $\frac{6}{7}$

Answer:

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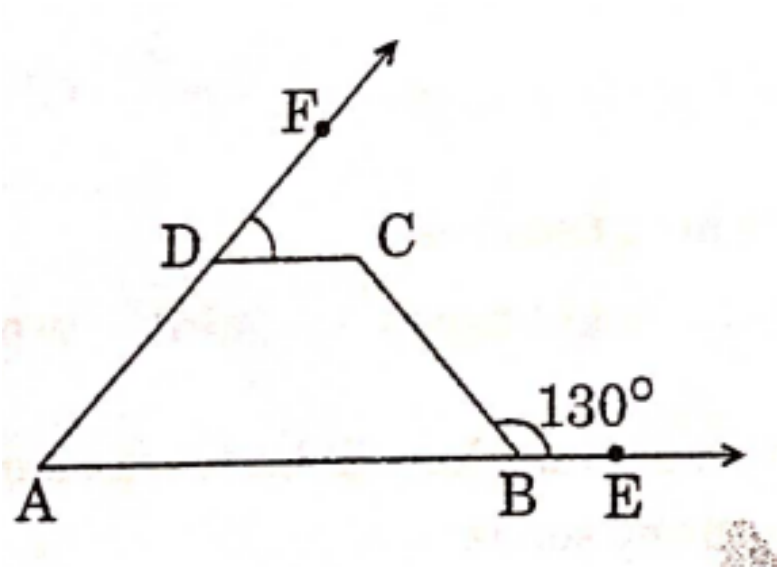
8. In the given figure, points A, B, C and D are concyclic and $\angle CBE = 130^\circ$. Then $\angle FDC$ is :



A. 130°

B. 80°

C. 50°

D. 30°

Answer:

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9. The x-coordinate of a point P is twice its y-coordinate. If P is equidistant from $Q(2, -5) and R(-3, 6)$, then find the coordinates of P.

A. (8,16)

B. (10,20)

C. (20,10)

D. (16,8)

Answer:

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10. If the point (x,4) lies on a circle whose centre is at the origin and radius is 5 cm, then the value of x is :

A. 0

B. ± 4

C. ± 5

D. ± 3

Answer:

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11. The value of θ for which $2 \sin 2\theta = 1$ is :

A. 15°

B. 30°

C. 45°

D. 60°

Answer:

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12. The number 385 can be expressed as the product of prime factors as

A. $5 \times 11 \times 13$

B. $5 \times 7 \times 11$

C. $5 \times 7 \times 13$

D. $5 \times 11 \times 17$

Answer:

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13. The difference between circumference and radius of a circles is 111 cm. The area of the circle is

A. $1366cm^2$

B. $1386cm^2$

C. $1376cm^2$

D. $1396cm^2$

Answer:

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14. From the letters of the word 'MANGO', a letter is selected at random. The probability that the letter is a vowel, is :

A. $\frac{1}{5}$

B. $\frac{3}{5}$

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

D. $\frac{4}{5}$

Answer:

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15. If $17x - 19y = 53$ and $19x - 17y = 55$, then the value of $(x + y)$ is :

A. 1

B. -1

C. 3

D. -3

Answer:

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16. The ratio in which the point (-4, 6) divides the line segment joining the points A(-6,10) and B(3,-8) is :

A. $2:5$

B. $7:2$

C. $2:7$

D. $5:2$

Answer:

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17. If $\sin\theta + \sin^2\theta = 1$, then the value of $\cos^2\theta + \cos^4\theta$ is

A. -1

B. 1

C. 0

D. 2

Answer:

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18. The decimal expansion of $\frac{43}{162}$:

A. is terminating

B. is non-terminating and non-recurring

C. is non-terminating and recurring

D. does not exist.

Answer:

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19. If the circumference of a circle a tripled, then its area becomes:

A. three times

B. nine times

C. eitht times

D. two times

Answer:

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20. A father is three times as old as his son. In 12 years time, he will be twice as old as his son. The sum of the present ages of the father and the son is:

A. 36 years

B. 48 years

C. 60 years

D. 42 years

Answer:

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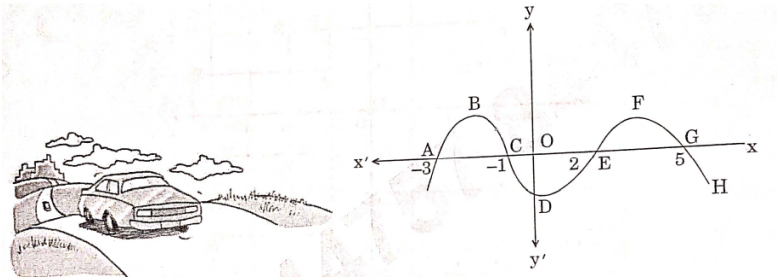
Section C

1. A car moves on a highway . The path it traces is given below



Based on the above information , answer the following questions :

What is the shape of the curve EFG ?

A. Parabola

B. Ellipse

C. Straight line

D. Circle

Answer:

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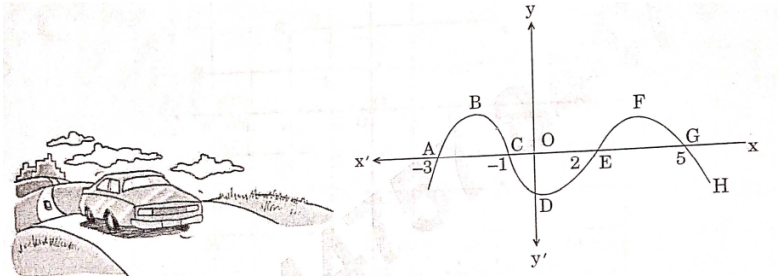
2. A car moves on a highway . The path it traces is given below



Based on the above information , answer the following questions :

If the curve ABC is represented by the polynomial $-\left(x^2+4x+3\right)$, then its zeroes are :

A. 1 and -3

B. -1 and 3

C. 1 and 3

D. -1 and -3

Answer:

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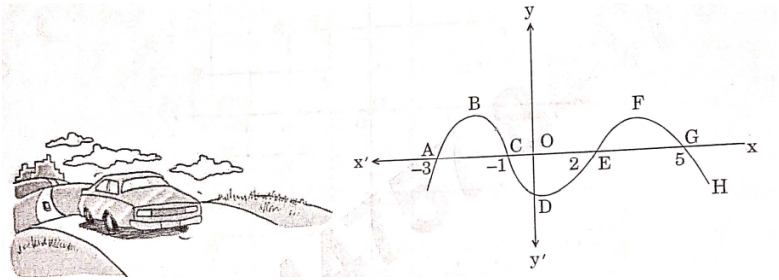
3. A car moves on a highway . The path it traces is given below



Based on the above information , answer the following questions :

If the path traced by the car has zeroes at -1 and 2 , then it is given by :

A. $x^2 + x + 2$

B. $x^2 - x + 2$

C. $x^2 - x - 2$

D. $x^2 + x - 2$

Answer:

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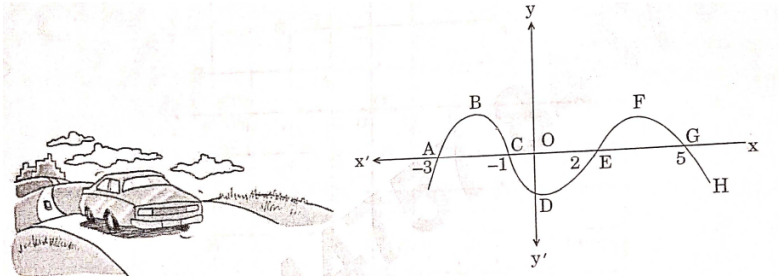
4. A car moves on a highway . The path it traces is given below



Based on the above information , answer the following questions :

The number of zeroes of the polynomial representing the whole curve , is :

A. 4

B. 3

C. 2

D. 1

Answer:

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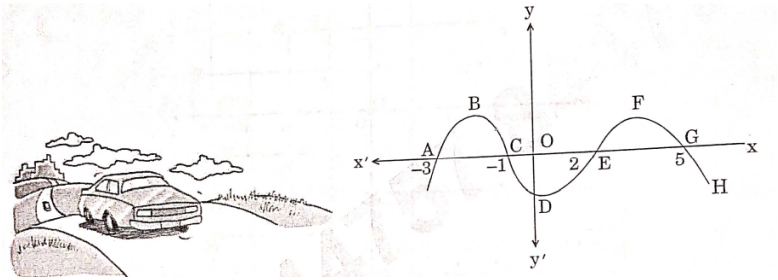
5. A car moves on a highway . The path it traces is given below



Based on the above information , answer the following questions :

The distance between C and G is

A. 4 units

B. 6 units

C. 8 units

D. 7 units

Answer:

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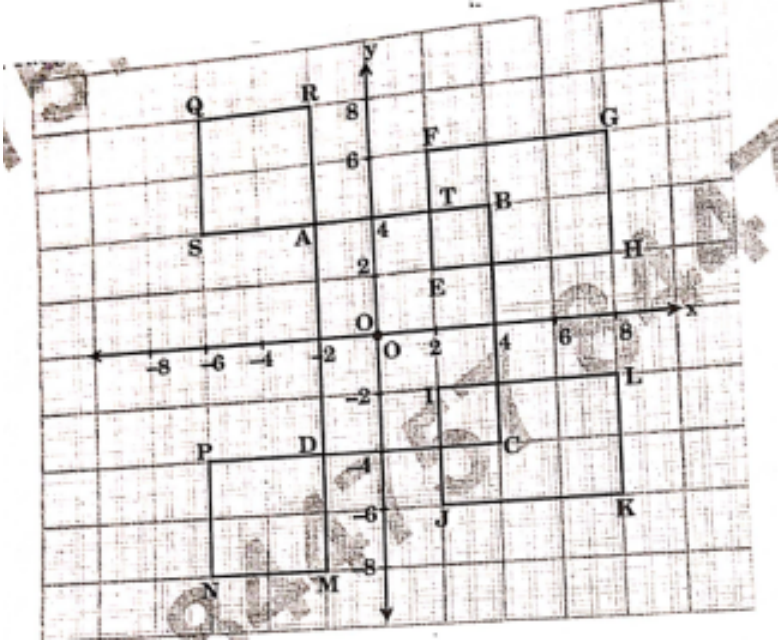
6. Shivani is an interior decorator . To design her own living room, she designed wall shelves. The graph of intersecting wall shelves is given below :



Based on the above information , asnwer the following questions:

If O is the origin , then what are the coordinates of S ?

A. $(-6, -4)$

B. (6,4)

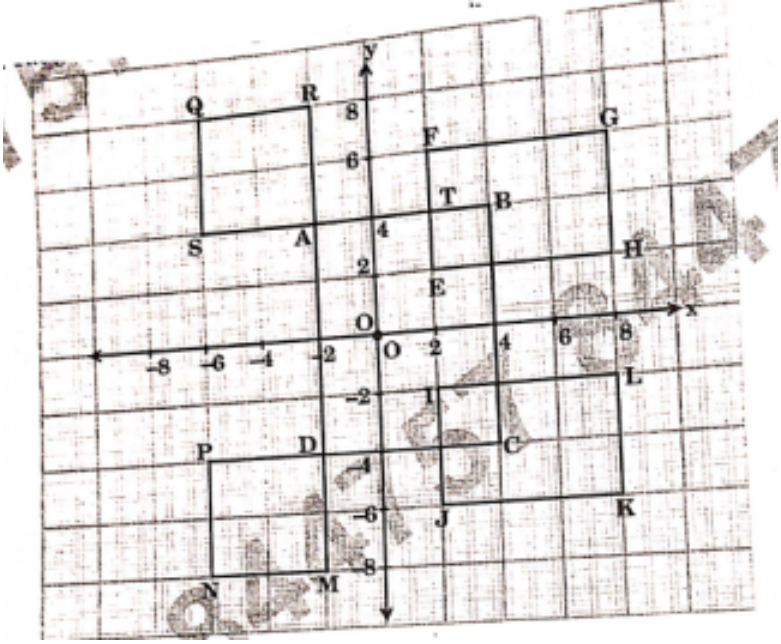
C. $(-6, 4)$

D. $(6, -4)$

Answer:

Watch Video Solution

7. Shivani is an interior decorator . To design her own living room, she designed wall shelves. The graph of intersecting wall shelves is given below :



Based on the above information , asnwer the following questions:

The coordinates of the mid-poit of the line - segment joining D and H is :

A. $\left(-3, \frac{2}{3} \right)$

B. $(3, -1)$

C. $(3, 1)$

D. $\left(-3, -\frac{3}{2}\right)$

Answer:

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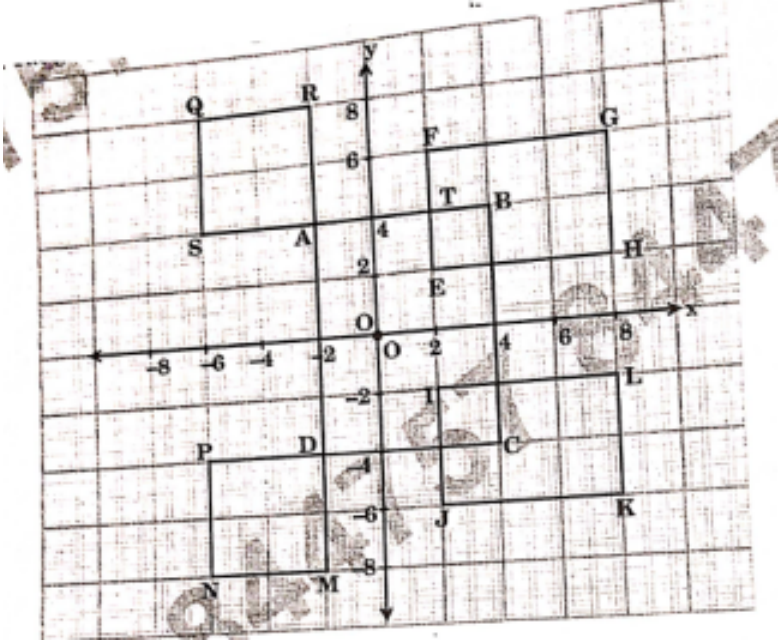
8. Shivani is an interior decorator . To design her own living room, she designed wall shelves. The graph of intersecting wall shelves is given below :



Based on the above information , asnwer the following questions:

The ratio in which the x - axis divides the line-segment joining the points A and C is :

A. $2:3$

B. $2:1$

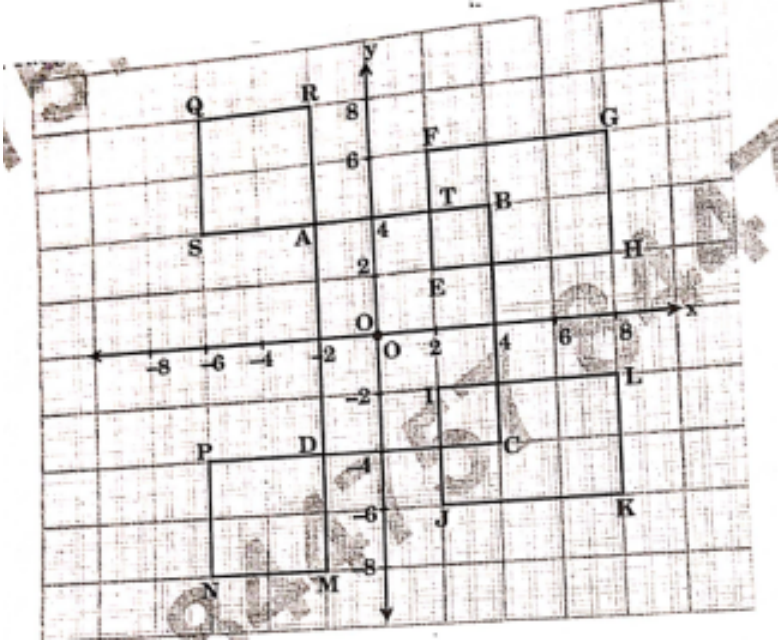
C. $1:2$

D. $1:1$

Answer:

Watch Video Solution

9. Shivani is an interior decorator . To design her own living room, she designed wall shelves. The graph of intersecting wall shelves is given below :



Based on the above information , asnwer the following questions:

The distance between the points P and G is .

A. 16 units

B. $3\sqrt{74}$ units

C. $2\sqrt{74}$ units

D. $\sqrt{74}$ units

Answer:

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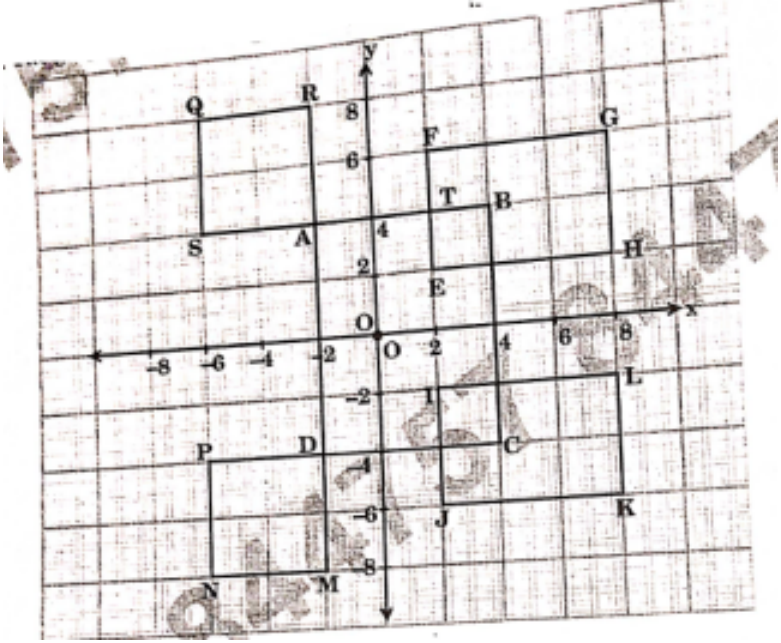
10. Shivani is an interior decorator . To design her own living room, she designed wall shelves. The graph of intersecting wall shelves is given below :



Based on the above information , asnwer the following questions:

The coordinates of the vertices of rectangle IJKL are :

A. I(2,0),J(2,6),K(8,6),L(8,2)

B. I(2,-2),J(2,-6),K(8,-6),L(8-2)

C. I(-2,0),J(-2,6),K(-8,6),L(-8,2)

D. I(-2,0),J(-2,-6),K(-8,-6),L(-8,-2)

Answer:

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