MATHS

BOOKS - EDUCART PUBLICATION

SAMPLE PAPER 07

Section A

1. If $0.3\overline{73}$ is expressed in the form $\frac{a}{b}$, then $\frac{a}{b} =$

A. $\frac{373}{999}$

B. $\frac{37}{99}$

C. $\frac{3}{9}$

D. $\frac{373.36..}{999}$

Answer: B

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2. If $2\cos 3\theta = \sqrt{3}$ and $0^\circ < \theta < 90^\circ$ then the value of θ is

A. 10°

B. 20°

C. 30°

D. 15°

Answer: A

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3. If in two triangles ABC and PQR, $\frac{AB}{PQ} = \frac{BC}{RP}$, then for the two triangles to be

similar, which of the following condition is necessary?

A. $\angle B = \angle Q$

B. $\angle A = \angle P$

C. $\angle B = \angle P$

D. $\angle A = \angle Q$

Answer: C

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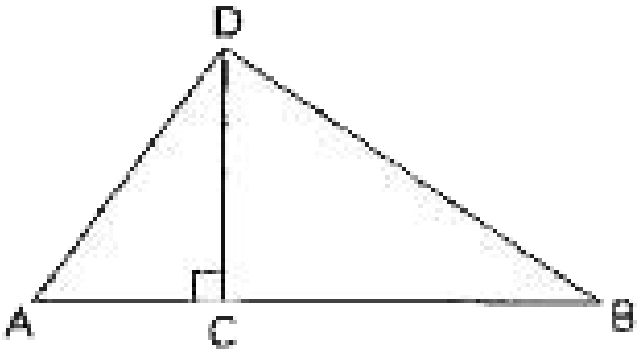
4. In the figure, AC = 3 cm, BC = 6 cm and CD = 4 cm. Then sin A + cos B =



A. $\frac{3}{10}$

B. $-\frac{1}{30}$

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

D. $\frac{4}{13}$

Answer: B

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5. The dependent pair of linear equations is always:

A. Inconsistent

B. Parallel

C. Straight

D. Consistent

Answer: D

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6. A circle's circumference is equal to the sum of the circumferences of two circles having diameters 34 cm and 28 cm. What is the radius of the new circle?

A. 31 cm

B. 62 cm

C. 38 cm

D. 28 cm

Answer: D

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7. A bag contains black balls and some white balls. If the probability of drawing a black ball is 0.5, then find the number of white balls in the bag. There are total 100 balls in the bag

A. 36

B. 50

C. 45

D. 55

Answer: B

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8. 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: B

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9. Write the algebraic representation of the situation, "the sum of two numbers is 137 and their difference is 43."

A. $x- y = 137, x + y = 43$

B. $x + y = 137, x- y = 43$

C. $2x + y = 137, x- y = 43$

D. $x + 2y = 137, x-2y = 43$

Answer: B

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10. Calculate the value of c for which pair of linear equations $cx - y = 2$ and $6x - 2y = 4$ will have infinitely many solutions.

A. 3

B. 5

C. -1

D. 0

Answer: A

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11. Calculate the ratio between the LCM and HCF of the numbers 5, 15 and 20.

A. $5:3$

B. $7:2$

C. $9:4$

D. $12:1$

Answer: D

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12. Consider two similar triangles ABC and LMN, whose perimeters are respectively 60 cm

and 48 cm. If the length of LM is 8 cm, the length of AB is:

A. 10 cm

B. 6 cm

C. 12 cm

D. 14 cm

Answer: A

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13. What is the value of $\frac{\cos^2 A}{\cos^2 B}$, if $\tan^2$ A = 1 +2 $\tan^2$ B?

A. $\sqrt{3}$

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

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

D. 1

Answer: B

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14. Find the coordinates of third vertex of a triangle, if centroid of the triangle is (3, - 5) and two of its vertices are (4, -8) and (3, 6).

A. (1, 5)

B. (2, -13)

C. (5, 6)

D. (-1, 3)

Answer: B

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15. After how many places of decimal will the number $\frac{343}{1400}$ terminate?

A. Two

B. Three

C. Four

D. Five

Answer: B

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16. In ΔABC, AD is the internal bisector of $\angle A$, meeting the side BC at D. If $BD = 5cm, BC = 7.5cm$, then $AB : AC$is

A. $1:2$

B. $2:1$

C. $3:1$

D. $1:3$

Answer: B

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17. Write the area of the sector of a circle whose radius is r and length of the arc is l .

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

B. lr

C. $\frac{\theta}{360^\circ} \times lr$

D. $\frac{\theta}{180^\circ} \times lr$

Answer: A

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18. If HCF (209, 737) = 11 and LCM (209, 737) = 209 x, then the value of x is :

A. 67

B. 72

C. 77

D. 81

Answer: A

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19. What is the probability of getting different numbers on dice, if two dice are thrown at the same time?

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

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

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

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

Answer: C

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20. If we draw x = a and y = b graphically, then these two lines will intersect at:

A. (a, b)

B. (a, 0)

C. (0, b)

D. (-a, -b)

Answer: A

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Section B

1. If the LCM of two prime numbers 47 and x is 517, then the value of x is:

A. 1

B. 47

C. 11

D. 51

Answer: C

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2. The value of $\frac{4\cos^2 60^\circ + 3\sec^2 30^\circ - \cot^2 45^\circ}{\cos^2 60^\circ + \sin^2 60^\circ}$ is:

A. 2

B. 4

C. 6

D. 5

Answer: B

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3. If $\triangle ABC \sim \triangle PQR$ and $\frac{BC}{QR} = \frac{1}{4}$ then $\frac{ar(\triangle PQR)}{ar(\triangle ABC)} =$

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

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

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

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

Answer: D

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4. If P (9a-2,-b) divides line segment joining A (3a+1,-3) and B(8a,5) in the ratio $3:1$, then find the values of a and b.

A. $-1, 3$

B. $1, 3$

C. $-1, -3$

D. $1, -3$

Answer: D

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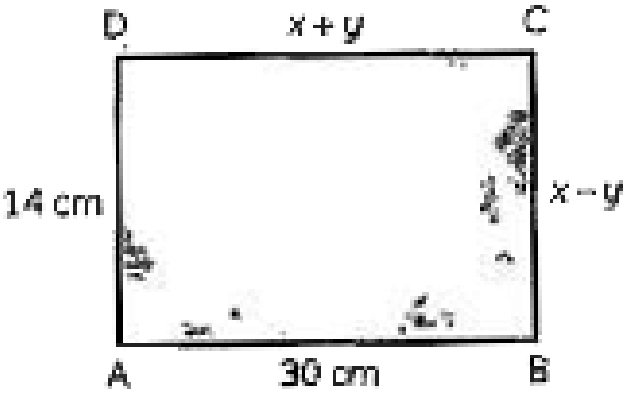
5. ABCD is a rectangle with dimensions mentioned in the figure. Find the value of y.



A. 21

B. 7

C. 22

D. 8

Answer: D

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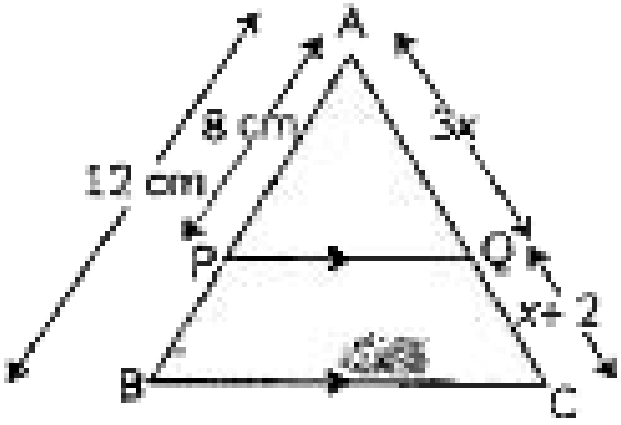
6. In the given figure, PQ II BC. Then the value af x is:



A. 1

B. 4

C. $\frac{8}{7}$

D. $\frac{4}{7}$

Answer: B

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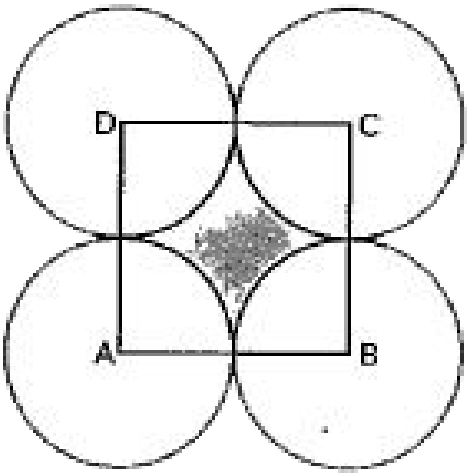
7. As shown in the figure, ABCD is a square of side 7 cm and A, B, C and D are centres of equal circles touching externally in pairs. The

area of the shaded region is:



A. $10.5cm^2$

B. $11.7cm^2$

C. $7.7cm^2$

D. $22cm^2$

Answer: A

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8. What is the number of bad eggs in a lot of 400, if, the probability of getting a bad egg is 0.035?

A. 14

B. 21

C. 28

D. 7

Answer: A

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9. In $\triangle$ ABC right angled at B, if the two sides AB and BC are in the ratio 1 : 3, evaluate the value of sin C.

A. $\frac{\sqrt{10}}{3}$

B. $\frac{3}{\sqrt{10}}$

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

D. $\frac{1}{\sqrt{10}}$

Answer: D

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10. If two irrational numbers are multiplied, then their product is:

A. zero

B. always rational

C. always irrational

D. rational or irrational

Answer: D

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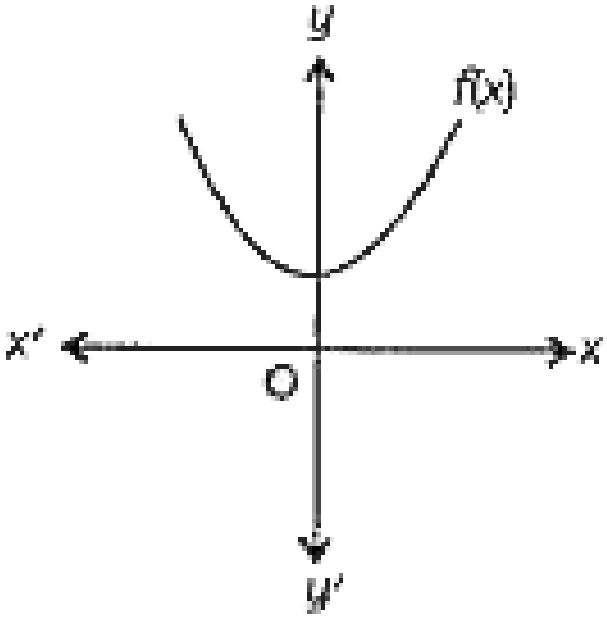
11. For the graph of y = f(x) shown below, how many zeroes of f(x) are there ?



A. 0

B. 1

C. 2

D. 3

Answer: A

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12. A man is going from his office to his house. He goes 15 m due West and then 8 m due North. What is the shortest distance between starting point and end point?

A. 19 m

B. 20 m

C. 18 m

D. 17 m

Answer: D

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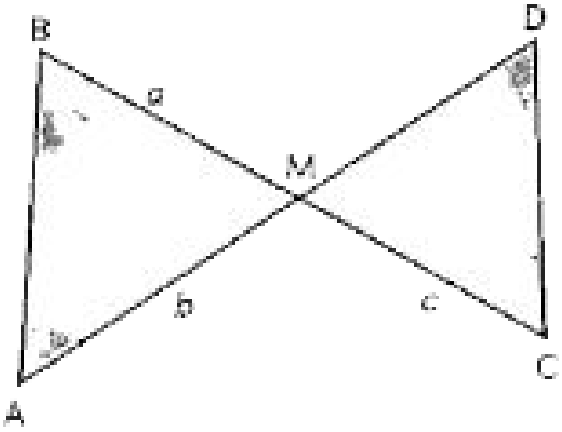
13. If $\triangle AMB \sim \triangle CMD$, then what is the measure of DM (in terms of a, b and c) ?



A. $\frac{a^2c^2}{b}$

B. $\frac{ac}{b^2}$

C. $a\frac{c}{b}$

D. $\frac{a^2c^2}{b^2}$

Answer: C

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14. Which of the following incorrect?

A. $\cos 90^\circ = 0$

B. $\sin^2\theta - \cos^2\theta = 1$

C. $\sec^2\theta - \tan^2\theta = 1$

D. $\cos ec^2\theta - \cot^2\theta = 1$

Answer: B

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15. A box had 24 marbles of which x are red, 2x are white and 3x are blue. A marble is selected at random from it. What is the probability that it is white?

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

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

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

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

Answer: A

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16. The number of revolutions made by a wheel of diameter 1 m to cover a distance of 22 km will be:

A. 4000

B. 5500

C. 7000

D. 2800

Answer: C

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17. Find the value of k, if the lines given by 4x + 5ky = 10 and 3x + Y + 1 = 0 are parallel

A. 7

B. $\frac{3}{8}$

C. $\frac{4}{15}$

D. -1

Answer: C

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18. Three elderly men Mr. Sharma, Mr. David and Mr. Abdul regularly went for a morning walk in their neighbourhood park. The time taken by Mr. Sharma, Mr. David and Mr. Abdul to complete one round of the park is 8 minutes, 10 minutes and 12 minutes respectively.

If all the three. men start walking in the same

direction from one point of the park, the time interval after which all three will meet again at the starting point is:

A. 8 minutes

B. 240 minutes

C. 960 minutes

D. 120 minutes

Answer: D

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19. What is the value of $\sec^2\theta, \quad \text{if} \quad \sin\theta - \cos\theta = 0$?

A. 1

B. 2

C. -1

D. 0

Answer: B

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20. Find the radius of a circle, ifthe end points of diameter of the circle are (2, 4) and (-3, -1).

A. $3\sqrt{2}$ units

B. $5\sqrt{2}$units

C. $\frac{5\sqrt{2}}{3}$ units

D. $\frac{5sqr2}{2}$ units

Answer: D

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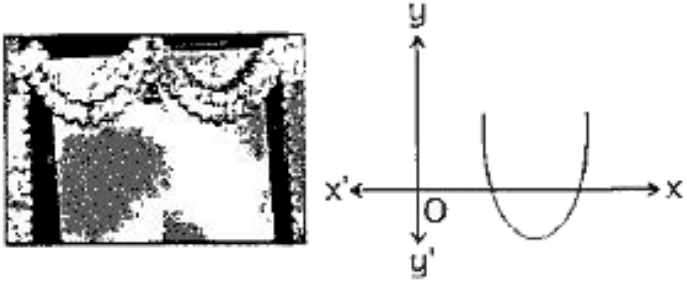
Section C

1. Radha decorated the door of her house with garlands on the occassion of Diwali. Each garland forms the shape of a parabola.



What type of polynomial does the parabola formed by the garland represent?

A. linear

B. Quadratic

C. Cubic

D. Biquadratic

Answer: B

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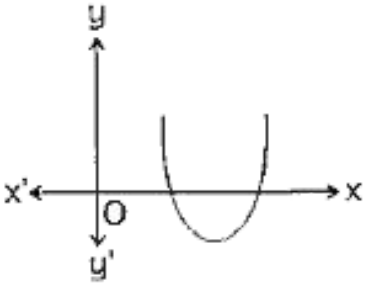

Evaluate the number of zeroes of a quadratic polynomial

A. more than 2

B. atmost 2

C. less than 2

D. equal to 1

Answer: B

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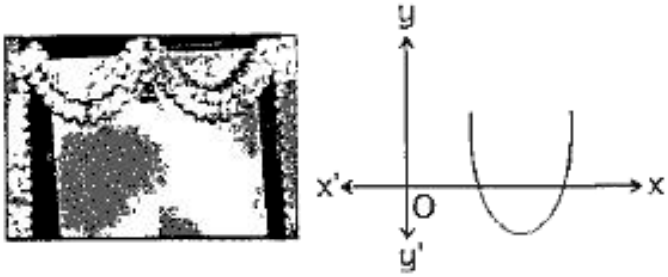
3. Radha decorated the door of her house with garlands on the occassion of Diwali. Each garland forms the shape of a parabola.



A quadratic polynomial with the sum and product of its zeroes as -1 and -2 respectively, is:

A. $x^2 + x - 2$

B. $x^2 - x - 2$

C. $x^2 + 2x - 1$

D. $x^2 - 2x - 1$

Answer: A

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4. What is the value of k, if one of the zeroes of the quadratic polynomial $(k-2)x^2 - 2x - 5$ is-1?

A. 5

B. 3

C. -5

D. 0

Answer: A

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5. If α β are the zeroes of the polynomial f(x) = $x^2 - 7x + 12$, then find the value of $\frac{1}{\alpha} + \frac{1}{\beta}$

A. 12

B. $-\frac{7}{12}$

C. -7

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

Answer: D

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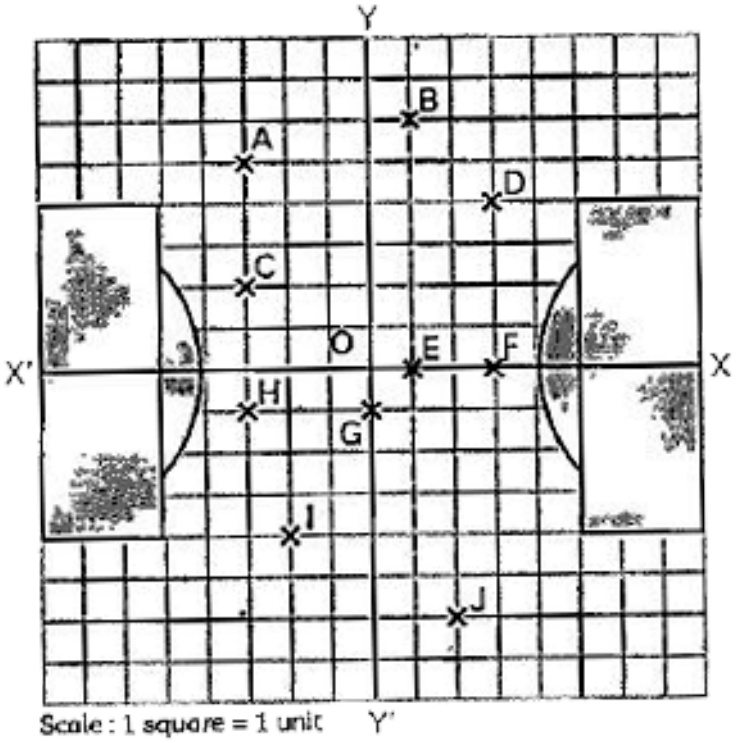
6. Interschool tournament matches of basketball are going to happen very soon. The coach is making his team practicing very hard.

He guided his team, the various tactics how to perform and their respective positions on the ground.

A coach is discussing the strategy of the game with his players. The position of players is marked with cross 'x' in the grid.



If we consider O as the origin, then the point shown on the grid whose abscissa is zero, is:

A. E

B. G

C. F

D. H

Answer: B

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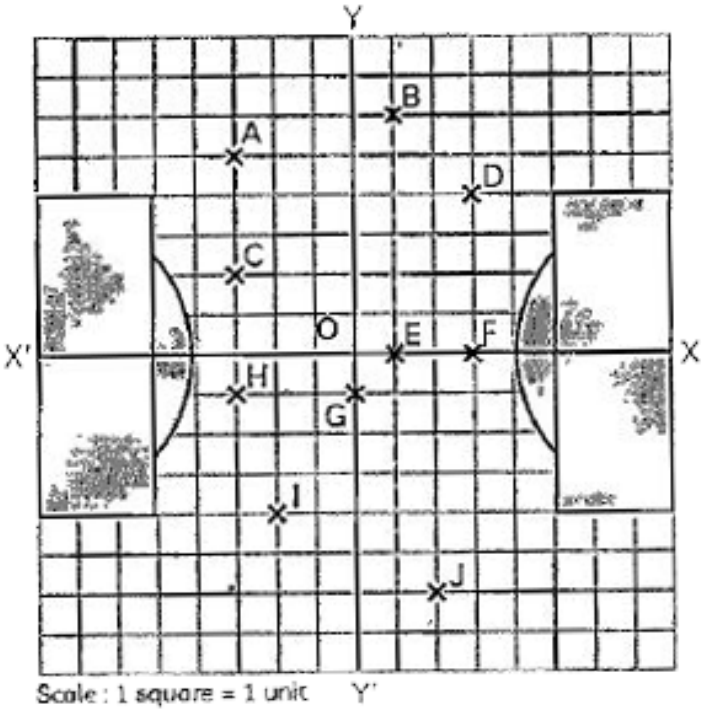

Evaluate the distance between the players C and B.

A. $4\sqrt{2}$ units

B. $2\sqrt{5}$ units

C. $5\sqrt{2}$ units

D. 5 units

Answer: A

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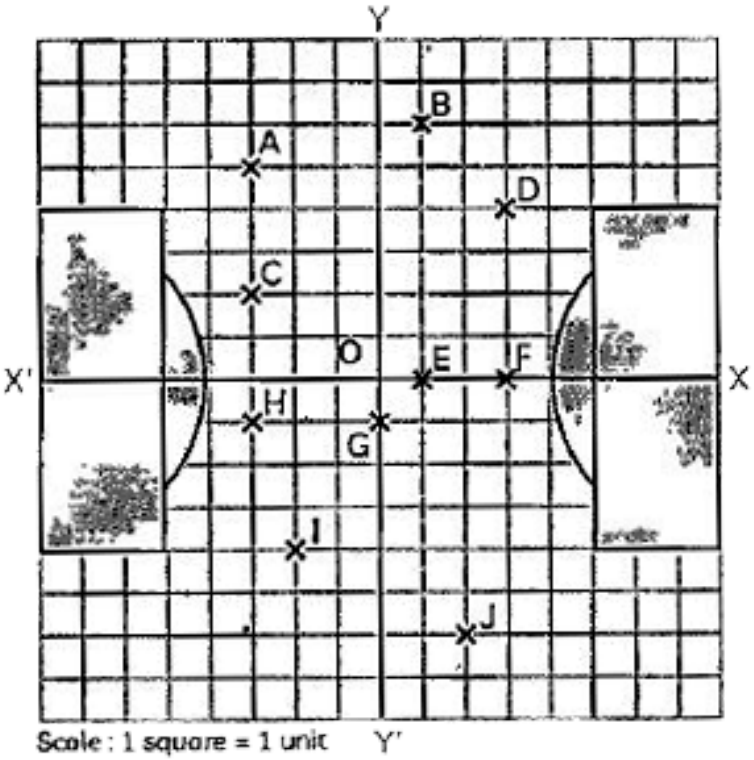

Which among the following is a player whose

position is 6 units from x-axis and 2 units to the right of y-axis?

A. A

B. J

C. B

D. I

Answer: B

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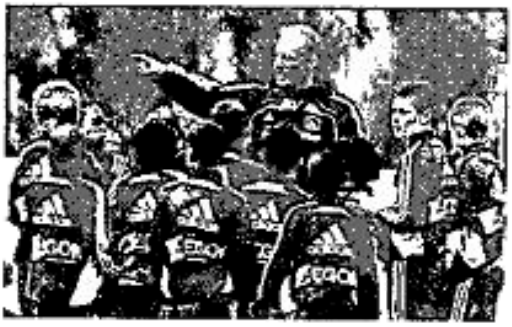

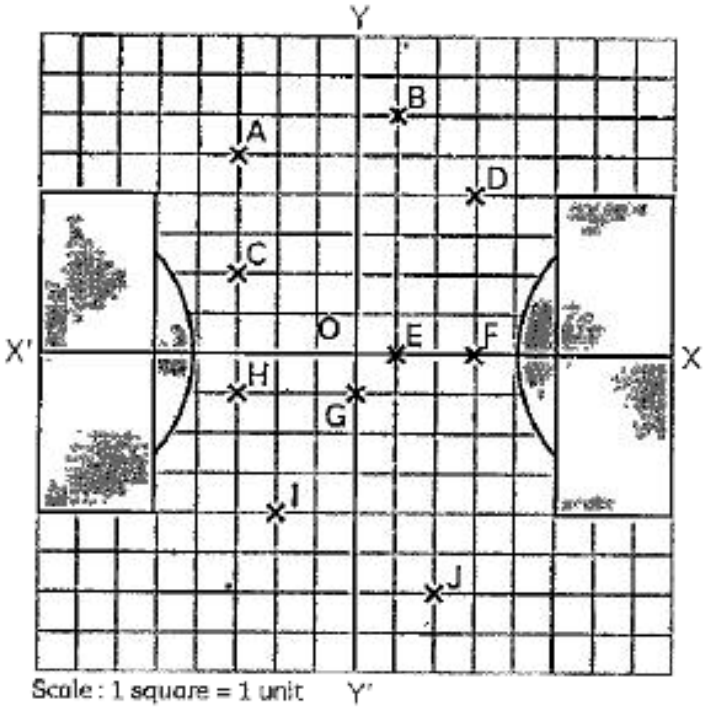

If we consider (x, y) as the coordinates of the mid-point of the line segment joining A and H, then:

A. $x = -2, y = 3$

B. $x = -3, y = -2$

C. $x = -3, y = 2$

D. $x = -3, y = 2$

Answer: C

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10. Interschool tournament matches of basketball are going to happen very soon. The coach is making his team practicing very hard.

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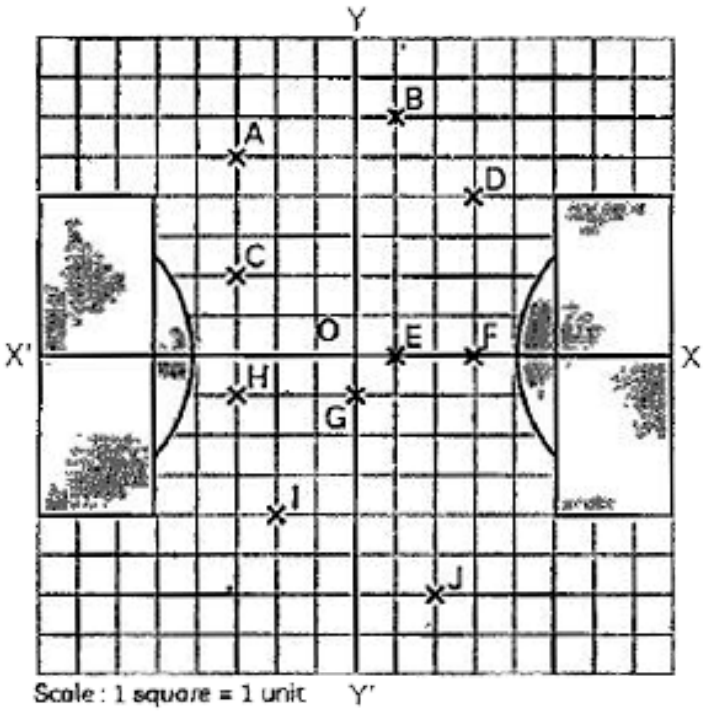

According to sudden requirement, coach of the team decided to increase one player in the 4th quadrant without increasing the total

number of players, so he decided to change the position of player F in such a way that F becomes symmetric to D w.r.t. x-axis.

Then new position of F is:

A. (4, 3)

B. (-4, 3)

C. (3, -4)

D. (3, 4)

Answer: C

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