MATHS

BOOKS - CALCUTTA BOOK HOUSE MATHS (BENGALI ENGLISH)

AREA OF CIRCLES

Examples Mcq

1. In the right-angled triangle $ABC, \angle ABC = 90°$. If the coordinates of A

and C be (0,4) and (3,0) respectively then the area of the ΔABC is

A. 12 Sq-units

B. 6 Sq-units

C. 24 Sq-units

D. 8 Sq-units

Answer:

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2. If the points (0,0), (4,-3) and (x,y) are collinear, then

    A. x = 8, y = -6

    B. x = 8, y = 6

    C. x = 4, y = -6

    D. x = -8, y = -6

Answer:

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3. If the area of the trinagle, the vertices of which are (2,7), (5, 1) and (x,3) is 18 Sq-units, then the value of x is

A. 10

B. 2

C. -2

D. -10

Answer:

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4. If the points(-1,3), (2,h) and (5,-1) are collinear, then the value of h is

A. 1

B. 0

C. 2

D. None of these

Answer:

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1. Examine the collinearity of the point (2,3), (4,5),and (6,5) .

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2. The centroid of a tringle is (6,9) and of two its vertices are (15,0) and (0,10). Find the coordinates of the third vertex.

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3. If the points (a,0),(0,b) and (1,1) are collinear , then show that $\dfrac{1}{a} + \dfrac{1}{b} = 1.$

4. The coordiantes of the centroid of the triangle fromed by the points $(x - y, y - z), (-x, -y)$ and (y, z) are -

5. For what value of k the points (1,-1), (2,-1) and (k,-1) are collinear ?

6. Prove that the line segment obtained by joining the points (1,2) and (-2,-4) passes through the origin.

7. Prove that the mid-point of the line segment obtained by joining the points (2,1) and (6,5) lies on the line obtained by joining the points (-4,-5) and (9,8).

8. Find the area of the quadrilateral formed by the Points (1,4), (-2,1), (2,-3) and (3,3).

9. The coordinates of the vertices A, B and C of a triangle ABC are (0,5), (-1,-2) and (11,7) respectively . Find the coordinates of the foot of the perpendicular from B on AC.

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10. The coordinates of A of the $\triangle ABC$ are (2,5) and the coordinates of its centroid are (-2,1). Find the coordinates of the mid-point of BC.

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11. A (-1,5), B (3,1) and C (5,7) are the vertices of the $\triangle ABC$. D, E and F are the mid-points of BC, CA and AB respectively. Find the area of $\triangle DEF$ and show that $\triangle ABC = 4\triangle DEF$.

12. The coordinates of the points A,B,C,D are (0,-1),(-1,2),(15,2) and (4,-5) respectively . Find the ratio in which $\overline{AC}$ divides $\overline{BD}$.

13. The vertices of the triangle ABC are (3,0), B (0,6) and C (6,9). The sides $\overline{AB}$ and $\overline{AC}$ of $\triangle ABC$ are intersected by $\overline{DE}$ at D and E respectively into a ratio of $1:2$ Prove by coordinates geometry that DeltaABC=9DeltaADE.`

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Exercise 3 Mcq

1. The area of the triangle produced by the straight line 5x +6y = 15 and the coordinate axes is

A. $\dfrac{15}{4}$ Sq-units

B. $\dfrac{25}{4}$ Sq-units

C. 15 Sq-units

D. 20 Sq-units

Answer:

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2. The area of the triangle with vertices A (5,2), B (-4,1) and C (0,-6) is

A. $\dfrac{57}{2}$ Sq-units

B. $\dfrac{67}{2}$ Sq-units

C. $\dfrac{37}{2}$ Sq-units

D. $\dfrac{77}{2}$ Sq-units

Answer:

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3. The centroid of a triangle is (6,4) and two of its vertices are (6,1) and (2,7). The third vertex of the triangle is

A. (10,4)

B. (10,-4)

C. (4,10)

D. (-4,10)

Answer:

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1. Show that the line segment obtained by joining the points (5,6) and (-10,-12) passes through the origin.

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2. Prove that the mid-point of the lines segments obatained by joining the points (2,1) and (6,5) lies on the line obtained by joining the points (-4,-5) and (9,8).

3. The area of the triangle with vertices (-1,m), (3,4) (m-2,m) is $1 \; \text{sq.units}$, then find the value of m.

4. Find the area of the triangle with verrtices $\left(at_1^2, 2at_1\right), \left(at_2^2, 2at_2\right)$ and $\left(at_3^2, 2at_3\right)$

5. Prove that the points $\left(a,\, bc - a^2\right),\ \left(b,\, ca - b^2\right),\ \left(c,\, ab - c^2\right)$ are collinear.

6. Prove that the points $\left(p,\, p^2\right),\ \left(q,\, q^2\right)$ and $\left(r,\, r^2\right)\,(p \neq q \neq r)$ can never be collinear.

1. Find the area of the with vertices at $\left(a, \dfrac{1}{a}\right)$, $\left(b, \dfrac{1}{b}\right)$ and $\left(c, \dfrac{1}{c}\right)$.

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2. Find the length of the perpendicular drawn from P to $\overline{QR}$ of the triangle with vertices at P (5,6), Q(-9,1) and R (-3,-1). If A be the mid-point of $\overline{QR}$, show that

$$PQ^2 + PR^2 = 2\left(AP^2 + AQ^2\right).$$

3. The coordinatea of A,B and C of the ΔABC are (3,1), (9,7) and (-3,7) respectively. If D,E and F are the mid-point of the sides $\overline{BC}, \overline{CA}$ and $\overline{AB}$ respectively, then find the area of the ΔDEF. Also show that $\Delta ABC = 4\Delta DEF$.

4. If the coordinates of A, B , C and D are (6,3), (-3,5), (4,-2) and (x,3x) respectively and if $\dfrac{\Delta DBC}{\Delta ABC} = \dfrac{1}{2}$, then show that $x = \dfrac{11}{8}$ or $\dfrac{3}{8}$.

5. If the points (a,b), (a',b') and (a-a',b-b') are collinear, then prove that ab' = a'b.

6. Prove that (a,b+c), (b,a+c) and (c,a+b) are collinear.

7. If P (-2,3), Q (4,-5) and R (-3,1) are the three consecutive vertices of a parallelogram, then find its area.

8. Four vertices of a quadrilateral are (-5,-5), (2,-4), (3,2) and (-2,3). Find the area of the quadrilateral.

9. Four vertices of a quadrilateral are (1,2), (-5,6), (7,-4) and (k,-2) and its area is zero. Find the value of k.

10. The area of a quadrilateral is 28 square unit. If the coordinates of its angular points be (-1,6) (-2,-4) , (3,-2) and (a,b) , then show that , 2a+b=6 or , 2a+b=2