MATHS

BOOKS - RD SHARMA MATHS (ENGLISH)

COORDINATE GEOMETRY

Others

1. Prove that the point $(-2, -1), (1, 0), (4, 3) and (1, 2)$ are the vertices of parallel-gram. Is it a rectangle?

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2. The three vertices of a parallelogram taken in order are $(-1, 0)$, $(3, 1)$ and $(2, 2)$ respectively. Find the coordinates of the fourth vertex.

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3. If the point $C(-1, 2)$ divides internally the line segment joining $A(2, 5)$ and B in ratio 3:4, find the coordinates of B.

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4. Determine the ratio in which the line $3x + y - 9 = 0$ divides the segment joining the points (1,3) and (2,7) :

A. 1:2

B. 2:3

C. 3:4

D. 4:5

Answer: null

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5. The coordinates of one end point of a diameter of a circle are $(4, -1)$ and the coordinates of the centre of the circle are $(1, -3)$. Find the coordinates of the other end of the diameter.

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6. If $A(5, -1), B(-3, -2) and(-1, 8)$ are the vertices of triangle ABC, find the length of median through A and the coordinates of the centroid.

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7. Of $A(-2, -1), B(a, 0), C(4, b)$ and $D(1, 2)$ are the vertices of a parallelogram, find the values of a and b.

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8. if the coordinates of the mid points of the Sides of a triangle are $(1, 2)$, $(0, \; -1)$ and $(2, \; -1)$.Find the coordinates of its vertices `:

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9. Prove analytically that the line segment joining the middle points of two sides of a triangle is equal to half of the third side.

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10. Prove that the lines joining the middle points of the opposite sides of a quadrilateral and the join of the middle points of its diagonals meet in a point and bisect one another

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11. The vertices of a ABC are $A(5, 5)$, $B(1, 5) and C(9, 1)$. A line is drawn to intersect side AB and AC at P and Q respectively, such that $\dfrac{AP}{AB} = \dfrac{AQ}{AC} = \dfrac{3}{4}$. Find the length of the line segment PQ.

12. If the coordinates of the mid-points of the sides of a triangle are $(3, 4), (4, 6) and (5, 7),$ find its vertices.

13. $A(3, 2) and B(- 2, 1)$ are two vertices of a triangle ABC whose centroid G has the coordinates $\left(\dfrac{5}{3}, -\dfrac{1}{3} \right)$. Find the coordinates of the third vertex C of the triangle.

14. If the coordinates of the mid-points of the sides of a triangle are

$(1, 1), (2, -3) and (3, 4)$. Find its centroid.

15. Prove that the area of triangle whose vertices are

$(t, t - 2), (t + 2, t + 2)$ and $(t + 3, t)$ is independent of t

16. If $D, E and F$ are the mid-points of sides BC, CA and AB respectively

of a ABC, then using coordinate geometry prove that Area of △DEF=

1/4 (Area of △ABC)

17. For what value of k are the points $(k, 2 - 2k)(- k + 1, 2k) and (- 4 - k, 6 - 2k)$ are collinear?

18. If the points $P, Q(x, 7), R, S(6, y)$ in this order divide the line segment joining $A(2, p) and B(7, 10)$ in 5 equal parts, find $x, y and p.$

19. If $A(2, 2), B(- 4, - 4) and C(5, - 8)$ are the vertices of a triangle, then the lengthof the median through vertex C is.

20. The midpoint P of the line segment joining the points A(-10, 4) and B(-2, 0) lies on the line segment joining the points C(-9, -4) and D(-4, y).

Find the ratio in which P divides CD. Also find the value of y.

21. If $R(x, y)$ is a point on the line segment joining the points $P(a, b) and Q(b, a),$ then prove that $x + y = a + b$

22. If the points $A(-1, -4), B(b, c) and C(5, -1)$ are collinear and $2b + c = 4,$ find the values of b and c

23. The perimeter of a triangle with vertices (0,4), (0,0) and (3,0) is

A. 7 + 'sqrt(5)'

B. 12

C. 7

D. 5

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24. A point P divides the line segment joining the points $A(3, -5) and B(-4, 8)$ such that $\frac{AP}{PB} = \frac{k}{1}$. If P lies on the line $x + y = 0$, then find the value of k.

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25. If G be the centroid of a triangle ABC, prove that,

$$AB^2 + BC^2 + CA^2 = 3(GA^2 + GB^2 + GC^2)$$

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26. If $A(-3, 5), B(-2, -7), C(1, -8) and D(6, 3)$ are the vertices of a quadrilateral ABCD find its area.

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27. The line segment joining the points $P(3, 3) and Q(6, -6)$ is trisected at the points A and B such that A is nearer to P. If A also lies on the line given by $2x + y + k = 0,$ find the value of $k.$

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28. If the area of ABC formed by $A(x, y), B(1, 2) and C(2, 1)$ is 6 squae units, then prove that $x + y = 15$ or $, x + y + 9 = 0$

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29. Show that the points $(a, a), (-a, -a)$ and $(-\sqrt{3}a, \sqrt{3}a)$ are the vertices of an equilateral triangle. Also, find its area.

30. 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.

31. If $A(4, \ -6), B(3, \ -2) and C(5, 2)$ are the vertices of `A B C, and AD is median then verify the fact that a median of a triangle ABC divides it into two triangles of equal areas.

32. Three vertices of a parallelogram ABCD are $A(3, \ -4), B(\ -1, \ -3) and C(\ -6, 2).$ Find the coordinates of vertiex D and find the area of parallelogram ABCD.

33. Two uniform spheres A (Hollow) and B (solid) of same radius R (

34. Let ABCD be a square of side 2a. Find the coordinates of the vertices of this square when (i) A coincides with the origin and AB and AD are along OX and OY respectively. (ii) The centre of the square is at the origin and coordinate axes are parallel to the sides AB and AD respectively

35. Find the coordinates of the vertices of an equilateral triangle of side 2a as shown in Figure.

36. The area of the triangle formed by $(a, b + c)$, $(b, c + a) and (c, a + b)$ is (a) $a + b + c$ (b) abc (c) $(a + b + c)^2$ (d) 0

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

38. Find the equation of the perpendicular bisector of AB, where A and B are the points (3,6) and $(-3, 4)$ respectively. Also, find its points of intersection with (i) x-axis (ii) y-axis.

39. If the point (x, y) is equidistant from the points $(a + b, b - a)$ and $(a - b, a + b)$, prove that $bx = ay$

40. Find the distance between the points: $(i) P(- 6, 7)$ and $Q(- 1, - 5)$ $(ii) R(a + b, a - b)$ and $S(a - b, - a - b)$ $(iii) A(at1, 2at_1)$ and $B(at2, 2at_2)$

41. Find the angle subtended at the origin by the line segment whose end points are (0, 10) and (10 ,0)

42. Prove that the points $(2, 3)$, $(-4, -6)$ and $\left(1, \dfrac{3}{2}\right)$ do not form a triangle.

43. Show that the points $(-3, 2)$, $(-5, -5)$, $(2, -3)$ and $(4, 4)$ are the vertices of a rhombus. Find the area of this rhombus.

44. The two opposite vertices of a square are (1,-6)and (5,4). Find the coordinates of the other two vertices.

45. In an A.P,the sum of m terms of an AP is n and sum of n terms of AP is m,then prove that sum of (m+n) terms of AP is-(m+n)

46. In the seating arrangement of desks in a classroom three studens Rohini, Sandhya and Bina are seated at $A(3, 1), B(6, 4) and C(8, 6).$ Do you think they are seated in al line?

47. Find the coordinates of points which trisect the line segment joining $(1, -2) and (-3, 4).$

48. If the point $P(2, 2)$ is equidistant from the points $A(-2, k) and B(-2k, -3)$, find $k.$ Also, find the length of AP.

49. In what ratio does the point $C\left(\dfrac{3}{5}, \dfrac{11}{5}\right)$ divide the line segment joining the points $A(3, 5) \, and \, B(-3, -2)$?

50. Find the ratio in which the line segment joining $A(1, -5)$ and $B(-4, 5)$ is divided by the x-axis. Also find the coordinates of the point of division.

51. If $a \neq b \neq c,$ prove that the points $(a, a^2), (b, b^2), (c, c^2)$ can never be collinear.

52. A point A divides the join of $P(-5, 1)$ and $Q(3, 5)$ in the ratio $k:1$. Then the integral value of k for which the area of ABC, where B is $(1, 5)$ and C is $(7, -2)$, is equal to 2 units in magnitude is___

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53. Prove that the mid-point of the hypotenuse of right angled triangle is equidistant from its vertices.

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54. Show that the points $(1, -1)$, $(5, 2)$ and $(9, 5)$ are collinear.

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55. Prove that the diagonals of a rectangle bisect each other and are equal.

56. Using analytical geometry, prove that the diagonals of a rhombus are perpendicular to each other.

57. Find the area of the triangle whose vertices are (i) $(2, 3),$ $(-1, 0),$ $(2, -4)(ii)(-5, -1),$ $(3, -5),$ $(5, 2)$

58. If the vertices of a triangle have rational coordinates, then prove that the triangle cannot be equilateral.

59. Find the area of the triangle ABC with $A(1, -4)$ and mid-points of sides through A being $(2, -1) and (0, -1).$

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60. If $P(x, y)$ is any point on the line joining the point $A(a, 0) and B(0, b),$ then show that $\dfrac{x}{a} + \dfrac{y}{b} = 1.$

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61. If $x + 2$ is a factor of $x^2 + ax + 2b$ and $a + b = 4,$ then (a) $a = 1, \ b = 3$ (b) $a = 3, \ b = 1$ (c) $a = -1, \ b = 5$ (d) $a = 5, \ b = -1$

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62. If the point $(x, 4)$ lies on a circle whose centre is at the origin and radius is 5, then $x = \pm 5$ (b) ± 3 (c) 0 (d) 14

63. If three points (x_1, y_1), (x_2, y_2), (x_3, y_3) lie on the same line, prove that $\dfrac{y_2 - y_3}{x_2 x_3} + \dfrac{y_3 - y_1}{x_3 x_1} + \dfrac{y_1 - y_2}{x_1 x_2} = 0$

64. If G be the centroid of a triangle ABC and P be any other point in the plane prove that $PA^2 + PB^2 + PC^2 = GA^2 + GB^2 + GC^2 + 3GP^2$

65. (a) $a^2 + b^2$ (b) $a + b$ (c) $a^2 - b^2$ (d) $\sqrt{a^2 + b^2}$

66. Two vertices of a triangle are $(3, \, -5) and (-7, 4).$ If its centroid is $(2, \, -1),$ find the third vertiex.

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67. If $A(5, 2), B(2, \, -2) and C(-2, t)$ are the vertices of right angles triangle with $\angle B = 90^0,$ then find the value of $t.$

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68. The length of a line segment is of 10 units and the coordinates of one end-point are $(2, \, -3).$ If the abscissa of the other end is 10, find the ordinate of the other end.

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69. Find the coordinates of the circumcentre of the triangle whose vertices are $(8, 6), (8, -2)$ and $(2, -2)$ Also, find its circum-radius.

70. Let the opposite angular points of a square be $(3, 4)$ and $(1, -1)$. Find the coordinates of the remaining angular points.

71. Show that $A(6, 4), B(5, -2)$ and $C(7, -2)$ are the vertices of an isosceles triangle. Also, find the length of the median through A.

72. Points $A(-1, y)$ and $B(5, 7)$ lie on a circle with centre $O(2, -3y)$. Find the values of y. Hence, find the radius of the circle.

73. Show that the points $(1, \ -1), (5, 2)$ and $(9, 5)$ are collinear.

74. Show that four points $(0, \ -1), (6, 7), (\ -2, 3) and (8, 3)$ are the vertices of a rectangle. Also, find its area.

75. If P and Q are two points whose coordinates are $(at^2, 2at) and \left(\dfrac{a}{t^2}, \dfrac{2a}{t} \right)$ respectively and S is the point (a,0). Show that $\dfrac{1}{SP} + \dfrac{1}{sQ}$ is independent of t.

76. If the two vertices of an equilateral triangle be $(0, 0), (3, \sqrt{3})$, find the third vertex.

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77. The base AB of two equilateral triangles ABC and ABC' with side $2a$ lies along the X -axis such that the mid-point of AB is at the origin as shown in . Find the coordinates of the vertices C and C' of the triangles.

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78. On which axis do the following points lie? $P(5, \ 0)$ (ii) $Q(0, \ -2)$ (iii) $R(-4, \ 0)$ (iv) $S(0, \ 5)$

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79. Find the value of x, if the distance between the points $(x, \ -1)$ and $(3, \ 2)$ is 5.

80. Find the point on the xaxis which is equidistant from $(2, \ 5) \ and \ (-2, \ 9)$

81. Find a point on the y-axis which is equidistant from the point $A(6, \ 5)$ and $B(-4, \ 3)$.

82. Do the points $A(3, \ 2)$, $B(-2, \ -3)$ and $C(2, \ 3)$ form a triangle? If so, name the type of triangle formed.

83. Prove that the points $(-3, 0)$, $(1, -3)$ and $(4, 1)$ are the vertices of an isosceles right-angled triangle. Find the area of this triangle.

84. If $P(2, -1)$, $Q(3, 4)$, $R(-2, 3)$ and $S(-3, -2)$ be four points in a plane, show that $PQRS$ is a rhombus but not a square. Find the area of the rhombus.

85. Find the co-ordinates of the centre of the circle passing through the points $(0, 0)$,$(-2, 1)$ and $(-3, 2)$. Also find its radius.

86. If (-4, 0) and (4,0) are two vertices of an equilateral triangle, find the coordinates of its third vertex.

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87. Find the distance between the following pair of points: $(- 6, \ 7)$ and $(- 1, \ - 5)$ (ii) $(a + b, \ b + c)$ and $(a - b, \ c - b)$

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88. Find the distance between the following pair of points: $(a \sin \alpha, \ - b \cos \alpha)$ and $(- a \cos \alpha, \ b \sin \alpha)$ (ii) $(a, \ 0)$ and $(0, \ b)$

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89. Find the value of a when the distance between the points $(3, \ a)$ and $(4, \ 1)$ is $\sqrt{10}$.

90. If the points $(2, \ 1)$ and $(1, \ -2)$ are equidistant from the point $(x, \ y)$, show that $x + 3y = 0$.

91. Find the values of x, y if the distances of the point $(x, \ y)$ from $(-3, \ 0)$ as well as from $(3, \ 0)$ are 4.

92. Show that the points $(-4, \ -1)$, $(-2, \ -4)$, $(4, \ 0)$ and $(2, \ 3)$ are the vertices points of a rectangle.

93. Show that the points $A(1, \; -2), \; B(3, \; 6), \; C(5, \; 10)$ and $D(3, \; 2)$ are the vertices of a parallelogram.

94. Show that the points $(1, 7), (4, 2), (-1, \; -1) and (-4, 4)$ are the vertices of a square.

95. Prove that the points (3, 0), (6, 4) and (-1, 3) are the vertices of a right angled isosceles triangle.

96. Prove that $(2, \ -2)$, $(-2, \ 1)$ and $(5, \ 2)$ are the vertices of a right angled triangle. Find the area of the triangle and the length of the hypotenuse.

97. Prove that the points $(2a, 4a), (2a, 6a)$ and $\left(2a + \sqrt{3}a, 5a\right)$ are the vertices of an equilaterall triangle whose side is 2a

98. An equilateral triangle has two vertices at the points $(3, 4)$ and $(-2, 3)$, find the coordinates of the third vertex.

99. If P(2,-1), Q (3,4), R(-2,3) and S (-3,-2) are four points in a plane, show that PQRS is a rhombus but not a square.

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100. Two vertices of an isosceles triangle are $(2, \ 0)$ and $(2, \ 5)$. Find the third vertex if the length of the equal sides is 3.

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101. Which point on x-axis is equidistant from (5, 9) and (-4, 6)

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102. Prove that the points $(-2, \ 5), \ (0, \ 1)$ and $(2, \ -3)$ are collinear.

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103. The coordinates of the point P are $(-3, \ 2)$. Find the coordinates of the point Q which lies on the line joining P and origin such that $OP = OQ$.

104. Which point on y-axis is equidistant from $(2, \ 3)$ and $(-4, \ 1)$?

105. The three vertices of a parallelogram are $(3, \ 4)$, $(3, \ 8)$ and $(9, \ 8)$. Find the fourth vertex.

106. Find the circumcentre of the triangle whose vertices are $(-2, \ -3), \ (-1, \ 0), \ (7, \ -6)$.

107. Find the centre of the circle passing through $(5, \ -8), \ (2, \ -9)$ and $(2, \ 1)$.

108. Find the value of k , if the point $P(0, \ 2)$ is equidistant from $(3, \ k)$ and $(k, \ 5)$.

109. Find the coordinates of the circumcentre of the triangle whose vertices are $(3, \ 0), \ (-1, \ -6)$ and $(4, \ -1)$. Also, find its circumradius.

110. Find a point on the x-axis which is equidistant from the points $(7, 6)$ and $(-3, 4)$.

111. Show that the points $A(5, 6), \ B(1, 5), \ C(2, 1)$ and $D(6, 2)$ are the vertices of a square.

112. Prove that the points $A(2, 3), \ B(-2, 2), \ C(-1, -2)$, and $D(3, -1)$ are the vertices of a square $ABCD$.

113. Find the point on x-axis which is equidistant from the points $(-2, 5)$ and $(2, -3)$.

114. Find the value of x such that $PQ = QR$ where the coordinates of $P, \ Q$ and R are $(6, \ -1), (1, \ 3)$ and $(x, \ 8)$ respectively.

115. Prove that the points $(0, \ 0), \ (5, \ 5)$ and $(-5, \ 5)$ are the vertices of a right isosceles triangle.

116. If the point $P(x, \ y)$ is equidistant from the points $A(5, \ 1)$ and $B(1, \ 5)$, prove that $x = y$.

117. If $Q(0, \ 1)$ is equidistant from $P(5, \ -3)$ and $R(x, \ 6)$, find the values of x . Also, find the distances QR and PR .

118. Find the values of y for which the distance between the points $P(2, \ -3)$ and $Q(10, \ y)$ is 10 units.

119. Find the centre of a circle passing through the points $(6, \ -6), \ (3, \ -7)$ and $(3, \ 3)$.

120. Two opposite vertices of a square are $(-1, \ 2)$ and $(3, \ 2)$. Find the coordinates of other two vertices.

121. Name the quadrilateral formed, if any, by the following points, and

give reasons for your answers:

$A(-1, -2), \ B(1, 0), \ C(-1, 2), \ D(-3, 0)$ (ii)

$A(-3, 5), \ B(3, 1), \ C(0, 3), \ D(-1, -4)$ (iii)

$A(4, 5), \ B(7, 6), \ C(4, 3), \ D(1, 2)$

122. Find the equation of the perpendicular bisector of the line segment

joining points $(7, 1)$ and $(3, 5)$.

123. Prove that the points $(3, 0), \ (4, 5), \ (-1, 4)$ and $(-2, -1)$,

taken in order, form a rhombus. Also, find its area.

124. Find a point on y-axis which is equidistant from the points $(5, \ -2)$ and $(-3, \ 2)$.

125. Find a relation between x and y such that the point $(x, \ y)$ is equidistant from the points $(3, \ 6)$ and $(-3, \ 4)$

126. If a point $A(0, \ 2)$ is equidistant from the points $B(3, \ p)$ and $C(p, \ 5)$, then find the value of p .

127. Show that the points A(7, 10), B(-2, 5) and C(3, -4) are the vertices of an isosceles right triangle.

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128. If the point $P(x, \ 3)$ is equidistant from the points $A(7, \ -1)$ and $B(6, \ 8)$, find the value of x and find the distance AP .

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129. If $A(3, \ y)$ is equidistant from points $P(8, \ -3)$ and $Q(7, \ 6)$, find the value of y and find the distance AQ .

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130. If the point $A(0, \ 2)$ is equidistant from the points $B(3, \ p)$ and $C(p, \ 5)$, find p . Also, find the length of AB .

131. If the point $P(k-1, \ 2)$ is equidistant from the points $A(3, \ k)$ and $B(k, \ 5)$, find the values of k .

132. Find the coordinates of the points which divides the line segment joining the points $(6, \ 3)$ and $(-4, \ 5)$ in the ratio $3:2$ internally.

133. In what ratio does the y-axis divide the line segment joining the point $P(-4, \ 5)$ and $Q(3, \ -7)$? Also, find the coordinates of the point of intersection.

134. Find the ratio in which the point $(-3, p)$ divides the line segment joining the points $(-5, -4)$ and $(-2, 3)$. Hence, find the value of p.

135. Point P divides the line segment joining the points $A(-1, 3)$ and $B(9, 8)$ such that $\frac{AP}{BP} = \frac{k}{1}$. If P lies on the line $x - y + 2 = 0$, find the value of k.

136. Point P divides the line segment joining the points $A(2, 1)$ and $B(5, -8)$ such that $\frac{AP}{AB} = \frac{1}{3}$. If P lies on the line 2x - y + k =0, find the value of k.

137. Prove that $(4, \ -1)$, $(6, \ 0)$, $(7, \ 2)$ and $(5, \ 1)$ are the vertices of a rhombus. Is it a square?

138. If the points A(6, 1), B(8, 2), C(9, 4) and D(p, 3) are the vertices of a parallelogram, taken in order, find the value of p.

139. Find the lengths of the medians of a ABC whose vertices are $A(7, \ -3), \ \ B(5, \ 3)$ and $C(3, \ -1)$.

140. Find the coordinates of the point which divides the line segment joining $(-1, \ 3)$ and $(4, \ -7)$ internally in the ratio $3:4$.

141. Find the points of trisection of the line segment joining the points: $(5, \ -6)$ and $(-7, \ 5)$ (ii) $(3, \ -2)$ and $(-3, \ -4)$ (iii) $(2, \ -2)$ and $(-7, \ 4)$.

142. Find the coordinates of the point where the diagonals of the parallelogram formed by joining the points $(-2, \ -1), \ (1, \ 0), \ (4, \ 3)$ and $(1, \ 2)$ meet.

143. Prove that the points $(3, \ -2), \ (4, \ 0), \ (6, \ -3)$ and $(5, \ -5)$ are the vertices of a parallelogram.

144. Three consecutive vertices of a parallelogram are $(-2, \ -1)$, $(1, \ 0)$ and $(4, \ 3)$. Find the fourth vertex.

145. The three vertices of a parallelogram ABCD taken in order are A(3, -4), B(-1, -3) and C(-6, 2). Find the coordinates of the fourth vertex D.

146. Find the ratio in which the point $(2, \ y)$ divides the line segment joining the points $A(-2, \ 2)$ and $B(3, \ 7)$. Also, find the value of y.

147. If $A(-1, 3)$, $B(1, -1)$ and $C(5, 1)$ are the vertices of a triangle ABC, what is the length of the median through vertex A ?

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148. If the coordinates of the mid-points of the sides of a triangle are $(1, 1)$, $(2, -3)$ and $(3, 4)$, find the vertices of the triangle.

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149. If a vertex of a triangle be $(1, 1)$ and the middle points of the sides through it be $(-2, 3)$ and $(5, 2)$, find the other vertices.

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150. In what ratio is the line segment joining the points A(-2, -3) and B(3, 7) divided by the y-axis? Also, find the coordinates of the point of

division.

151. In what ratio is the line segment joining $(-3, -1)$ and $(-8, -9)$ divided at the point $(-5, -21/5)$?

152. If the middle point of the line segment joining $(3, 4)$ and $(k, 7)$ is (x, y) and $2x + 2y + 1 = 0$, find the value of k.

153. In what ratio does the line x -y - 2 = 0 divides the line segment joining (3, -1) and (8, 9) ?

154. Find the ratio in which the line segment joining $(-2, -3)$ and $(5, 6)$ is divided by (i) x-axis (ii) y-axis. Also, find the coordinates of the point of division in each case.

155. Prove that the points $(4, 5)$, $(7, 6)$, $(6, 3)$, $(3, 2)$ are the vertices of a parallelogram. Is it a rectangle.

156. Prove that $(4, 3)$, $(6, 4)$, $(5, 6)$ and $(3, 5)$ are the angular points of a square.

157. Show that the points $(-4, -1)$, $(-2, -4)$, $(4, 0)$ and $(2, 3)$ are the vertices points of a rectangle.

158. Find the lengths of the medians of a triangle whose vertices are $A(-1, 3)$, $B(1, -1)$ and $C(5, 1)$.

159. Three vertices of a parallelogram are $(a+b, a-b)$, $(2a+b, 2a-b)$, $(a-b, a+b)$. Find the fourth vertex.

160. If two vertices of a parallelogram are $(3, 2)$, $(-1, 0)$ and the diagonals cut at $(2, -5)$, find the other vertices of the parallelogram.

161. If the points $(-2, -1)$, $(1, 0)$, $(x, 3)$ and $(1, y)$ form a parallelogram, find the values of x and y.

162. The points $A(2, 0)$, $B(9, 1)$, $C(11, 6)$ and $D(4, 4)$ are the vertices of a quadrilateral $ABCD$. Determine whether $ABCD$ is a rhombus or not.

163. If three consecutive vertices of a parallelogram are $(1, \ -2), \ (3, \ 6)$ and $(5, \ 10)$, find its fourth vertex.

164. If the points $A(a, \ -11), \ B(5, \ b), \ C(2, \ 15)$ and $D(1, \ 1)$ are the vertices of a parallelogram $ABCD$, find the values of a and b.

165. If the coordinates of the mid-points of the sides of a triangle be $(3, \ -2), \ (-3, \ 1)$ and $(4, \ -3)$, then find the coordinates of its vertices.

166. Find the lengths of the medians of a ABC having vertices at $A(0, \ -1), \ B(2, \ 1)$ and $C(0, \ 3)$.

167. Find the lengths of the medians of a ABC having vertices at $A(5, 1), B(1, 5)$, and $C(-3, \ -1)$.

168. Find the coordinates of the points which divide the line segment joining the points $(-4, \ 0)$ and $(0, \ 6)$ in four equal parts.

169. Show that the mid-point of the line segment joining the points $(5, 7)$ and $(3, 9)$ is also the mid-point of the line segment joining the

points $(8, 6)$ and $(0, 10)$.

170. Find the distance of the point $(1, 2)$ from the mid-point of the line segment joining the points $(6, 8)$ and $(2, 4)$.

171. If A and B are $(1, 4)$ and $(5, 2)$ respectively, find the coordinates of P when $AP/BP = 3/4$.

172. Show that the points $A(1, 0)$, $B(5, 3)$, $C(2, 7)$ and $D(-2, 4)$ are the vertices of a parallelogram.

173. Determine the ratio in which the point $P(m, \ 6)$ divides the join of $A(-4, \ 3)$ and $B(2, \ 8)$. Also, find the value of m.

174. Determine the ratio in which the point $(-6, \ a)$ divides the join of $A(-3, \ 1)$ and $B(-8, \ 9)$. Also find the value of a.

175. The line segment joining the points $(3, \ -4)$ and $(1, \ 2)$ is trisected at the points P and Q. If the coordinates of P and Q are $(p, \ -2)$ and $(5/3, \ q)$ respectively. Find the values of p and q.

176. The line joining the points $(2, \ 1)$ and $(5, \ -8)$ is trisected at the points P and Q . If point P lies on the line $2x - y + k = 0$. Find the value of k .

177. If A and B are two points having coordinates $(-2, \ -2)$ and $(2, \ 4)$ respectively, find the coordinates of P such that $AP = \dfrac{3}{7}AB$.

178. Find the coordinates of the points which divide the line segment joining $A(-2, 2)$ and $B(2, 8)$ into four equal parts.

179. $A(4, \ 2)$, $B(6, 5)$ and $C(1, \ 4)$ are the vertices of triangle ABC . The median from A meets BC in D . Find the coordinates of the point D .

180. $A(4, \ 2)$, $B(6, 5)$ and $C(1, \ 4)$ are the vertices of ABC . Find the coordinates of point P on AD such that $AP : PD = 2 : 1$.

181. $A(4, \ 2)$, $B(6, 5)$ and $C(1, \ 4)$ are the vertices of ABC . Find the coordinates of the points Q and R on medians BE and CF respectively such that $BQ : QE = 2 : 1$ and $CR : RF = 2 : 1$. What do you observe?

182. $ABCD$ is a rectangle formed by joining the points $A(-1, -1), \ B(-1, 4), \ C(5, 4)$ and $D(5, -1)$. $P, \ Q, \ R$ and S are the mid-points of sides $AB, \ BC, \ CD$ and DA respectively. Is the quadrilateral $PQRS$ a square? a rectangle? or a rhombus? Justify your answer.

183. Show that $A(-3, 2), \ B(-5, -5), \ C(2, -3)$ and $D(4, 4)$ are the vertices of a rhombus.

184. Find the ratio in which the y-axis divides the line segment joining the points $(5, -6)$ and $(-1, -4)$. Also, find the coordinates of the point of division.

185. If the points $A(6,\ 1)$, $B(8,\ 2)$, $C(9,\ 4)$ and $D(k,\ p)$ are the vertices of a parallelogram taken in order, then find the values of k and p.

186. In what ratio does the point $(-4,\ 6)$ divide the line segment joining the points $A(-6,\ 10)$ and $B(3,\ -8)$?

187. Find the coordinates of a point A , here AB is a diameter of the circle whose centre is $(2,\ -3)$ and $B(1,\ 4)$.

188. Find the ratio in which the point $P(-1, y)$ lying on the line segment joining $A(-3, 10)$ and $B(6, -8)$ divides it. Also find the value of y.

189. Points P, Q, R and S divide the line segment joining the points $A(1, 2)$ and $B(6, 7)$ in 5 equal parts. Find the coordinates of the points P, Q and R.

190. Find the ratio in which the point $P(x, 2)$ divides the line segment joining the points $A(12, 5)$ and $B(4, -3)$. Also, find the value of x

191. Find the ratio in which the line segment joining the points $A(3, -3)$ and $B(-2, 7)$ is divided by x-axis. Also, find the coordinates of the point of division.

192. Find the ratio in which the point $P\left(\dfrac{3}{4}, \dfrac{5}{12}\right)$ divides the line segment joining the points $A\left(\dfrac{1}{2}, \dfrac{3}{2}\right)$ and B(2, -5).

193. Find the coordinates of the centroid of a triangle whose vertices are $(0, 6)$, $(8, 12)$ and $(8, 0)$.

194. Find the centroid of the triangle whose vertices are: (i) $(1, 4), (-1, -1), (3, -2)$ (ii) $(-2, 3), (2, -1), (4, 0)$

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195. Two vertices of a triangle are $(1, 2), (3, 5)$ and its centroid is at the origin. Find the coordinates of the third vertex.

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196. If $(-2, 3), (4, -3)$ and $(4, 5)$ are the mid-points of the sides of a triangle, find the coordinates of its centroid.

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197. In Fig. 14.40, a right triangle BOA is given. C is the mid-point of the hypotenuse AB. Show that it is equidistant from the vertices O, A

and B. (FIGURE)

198. Find the third vertex of a triangle, if two of its vertices are at $(-3, \ 1)$ and $(0, \ -2)$ and the centroid is at the origin.

199. Find the area of a triangle whose vertices are $A(3, 2), \ B(11, \ 8)$ and $C(8, \ 12)$.

200. Find the area of the triangle formed by joining the midpoints of the sides of the triangle whose vertices are (0, 1), (2, 1) and (0, 3). Find the ratio of this area to the area of the given triangle.

201. If $P(1, \ 2), \ \ Q(1, \ 0)$ and $R(0, \ 1)$ are the mid-points of the sides $AB, \ BC$ and AC respectively of ABC , find the coordinates of the vertices $A, \ B$ and C , and hence find the area of ABC .

202. The vertices of ABC are $A(4, \ 6), \ \ B(1, \ 5)$ and $C(7, \ 2)$. A line is drawn to intersect sides AB and AC at D and E respectively such that $\dfrac{AD}{AB} = \dfrac{AE}{AC} = \dfrac{1}{4}$. Calculate the area of ADE and compare it with the area of ABC .

203. Find the area of the quadrilateral $ABCD$ whose vertices are respectively $A(1, \ 1), \ B(7, \ -3), \ C(12, \ 2)$ and $D(7, \ 21)$.

204. Prove that the points $(2, \ -2), (-3, \ 8)$ and $(-1, \ 4)$ are collinear.

205. For what value of x will the points $(x, \ -1), (2, \ 1)$ and $(4, \ 5)$ lie on a line?

206. Find the condition that the point $(x, \ y)$ may lie on the line joining $(3, \ 4)$ and $(-5, \ -6)$.

207. If the points (p, q), (m, n) and $(p - m, q - n)$ are collinear, show that $pn = qm$.

208. Find k so that the point $P(-4, 6)$ lies on the line segment joining $A(k, 10)$ and $B(3, -8)$. Also, find the ratio in which P divides AB

209. If the coordinates of two points A and B are $(3, 4)$ and $(5, -2)$ respectively. Find the coordinates of any point P , if PA = PB, and area of triangle PAB is 10.

210. The coordinates of A, B, C are $(6, 3)$, $(-3, 5)$ and $(4, -2)$ respectively and P is any point (x, y). Show that the ratio of the areas of triangles PBC and ABC is $\left| \dfrac{x + y - 2}{7} \right|$.

211. If the points $A(1, -2)$, $B(2, 3)$, $C(-3, 2)$ and $D(-4, -3)$ are the vertices of parallelogram $ABCD$, then taking AB as the base, find the height of the parallelogram.

212. If the points $P(-3, 9)$, $Q(a, b)$ and $R(4, -5)$ are collinear and $a + b = 1$, find the values of a and b.

213. Find the area of the triangle whose vertices are $(6, 3)$, $(-3, 5)$ and $(4, -2)$ (ii) $(at1^2, 2at_1)$, $(at2^2, 2at_2)$ and $(at3^2, 2at_3)$ (iii) $(a, c + a)$, (a, c) and $(-a, c - a)$

214. Find the area of the quadrilateral whose vertices are $(-3, 2)$, $(5, 4)$, $(7, -6)$ and $(-5, -4)$

215. Find the area of the quadrilateral whose vertices taken in order are $A(-5, -3)B(-4, -6)C(2, -1)$ and $D(1, 2)$.

216. Find the area of the quadrilateral whose vertices are $(-4, -2)$, $(-3, -5)$, $(3, -2)$, $(2, 3)$

217. The four vertices of a quadrilateral are $(1, 2)$, $(-5, 6)$, $(7, -4)$ and $(k, -2)$ taken in order. If the area of the quadrilateral is zero, find the value of k .

218. The vertices of ABC are $(-2, 1)$, $(5, 4)$ and $(2, -3)$ respectively. Find the area of the triangle and the length of the altitude through A .

219. Show that the following sets of points are collinear. $(2, \ 5)$, $(4, \ 6)$ and $(8, \ 8)$ (b) $(1, \ -1)$, $(2, \ 1)$ and $(4, \ 5)$.

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220. Prove that the points $(a, \ 0)$, $(0, \ b)$ and $(1, \ 1)$ are collinear if, $\dfrac{1}{a} + \dfrac{1}{b} = 1$.

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221. The area of a triangle is 5. Two of its vertices are $(2, \ 1)$ and $(3, \ -2)$. The third vertex lies on $y = x + 3$. Find the third vertex.

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222. Four points $A(6, \ 3)$, $B(-3, \ 5)$, $C(4, \ -2)$ and $D(x, \ 3x)$ are given in such a way that $\dfrac{DBC}{ABC} = \dfrac{1}{2}$, find x .

223. For what value of a the point $(a, \ 1)$, $(1, \ -1)$ and $(11, \ 4)$ are collinear?

224. Prove that the points $(a, \ b)$, $(a_1, \ b_1)$ and $(a - a_1, \ b - b_1)$ are collinear if $ab_1 = a_1 b$.

225. If $(x, \ y)$ be on the line joining the two points $(1, \ -3)$ and $(-4, \ 2)$, prove that $x + y + 2 = 0$.

226. Find the value of k if points $(k, 3)$, $(6, -2)$ and $(-3, 4)$ are collinear.

227. Find the value of k , if the points $A(7, -2)$, $B(5, 1)$ and $C(3, 2k)$ are collinear.

228. If the point $P(m, 3)$ lies on the line segment joining the points $A\left(-\dfrac{2}{5}, 6\right)$ and $B(2, 8)$, find the value of m .

229. Find the value of k if the points A(8,1), B(3,-4) and C(2,k) are collinear.

230. Find the value of a for which the area of the triangle formed by the points $A(a, \ 2a), \ \ B(-\ 2, \ 6)$ and $C(3, \ 1)$ is 10 square units.

231. If the vertices of a triangle are $(1, \ -\ 3), \ (4, \ p)$ and $(-\ 9, \ 7)$ and its area is 15 sq. units, find the value(s) of p .

232. Find the area of a parallelogram $ABCD$ if three of its vertices are $A(2, \ 4), \ B(2 + \sqrt{3}, \ 5)$ and $C(2, \ 6)$.

233. The points $(k - 1, k + 2), (k, k + 1), (k + 1, k)$ are collinear for

234. If the points $A(-1, \ -4), \ B(b, \ c)$ and $C(5, \ -1)$ are collinear and $2b + c = 4$, find the values of b and c.

235. If $P(-5, \ -3), \ Q(-4, \ -6), \ R(2, \ -3)$ and $S(1, \ 2)$ are the vertices of a quadrilateral $PQRS$, find its area.

236. Find the area of the triangle PQR with $Q(3, \ 2)$ and the mid-points of the sides through Q being $(2, \ -1)$ and $(1, \ 2)$.

237. Write the distance between the points $A(10\cos\theta,\ 0)$ and $B(0,\ 10\sin\theta)$.

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238. Write the perimeter of the triangle formed by the points $O(0,\ 0),\ A(a,\ 0)$ and $B(0,\ b)$.

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239. Write the ratio in which the line segment joining points $(2,\ 3)$ and $(3,\ -2)$ is divided by X axis.

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240. What is the distance between the points $(5\sin 60o,\ 0)$ and $(0,\ 5\sin 30o)$?

241. If $A(-1, 3)$, $B(1, -1)$ and $C(5, 1)$ are the vertices of a triangle ABC , what is the length of the median through vertex A ?

242. If the distance between points $(x, 0)$ and $(0, 3)$ is 5, what are the values of x ?

243. What is the area of the triangle formed by the points $O(0, 0)$, $A(6, 0)$ and $B(0, 4)$?

244. Write the coordinates of the point dividing line segment joining points $(2, 3)$ and $(3, 4)$ internally in the ratio $1 : 5$.

245. If the centroid of the triangle formed by points $P(a, b)$, $Q(b, c)$ and $R(c, a)$ is at the origin, what is the value of $a + b + c$?

246. If the centroid of the triangle formed by points P (a , b) , Q (b , c) and R (c , a) is at the origin, what is the value of $\dfrac{a^2}{bc} + \dfrac{b^2}{ca} + \dfrac{c^2}{ab}$?

247. Write the coordinates of a point on X -axis which is equidistant from the points $(-3, 4)$ and $(2, 5)$.

248. If the mid-point of the segment joining $A(x, \ y + 1)$ and $B(x + 1, \ y + 2)$ is $C\left(\dfrac{3}{2}, \ \dfrac{5}{2}\right)$, find $x, \ y$.

249. Two vertices of a triangle have coordinates $(-8, \ 7)$ and $(9, \ 4)$. If the centroid of the triangle is at the origin, what are the coordinates of the third vertex?

250. Write the coordinates the reflections of point $(3, \ 5)$ in X and Y - axes.

251. If points Q and R reflections of point $P(-3, 4)$ in X and Y axes respectively, what is QR ?

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252. Write the formula for the area of the triangle having its vertices at (x_1, y_1), (x_2, y_2) and (x_3, y_3) .

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253. Write the condition of collinearity of points (x_1, y_1), (x_2, y_2) and (x_3, y_3) .

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254. Find the values of x for which the distance between the point $P(2, -3)$ and $Q(x, 5)$ is 10.

255. Write the ratio in which the line segment joining the points $A(3, \ -6)$ and $B(5, \ 3)$ is divided by X -axis.

256. Find the distance between the points $\left(-\frac{8}{5}, \ 2 \right)$ and $\left(\frac{2}{5}, \ 2 \right)$

257. Find the value of a so that the point $(3, \ a)$ lies on the line represented by $2x - 3y + 5 = 0$

258. What is the distance between the points $A(c, \ 0)$ and $B(0, \ -c)$?

259. If $P(2, \ 6)$ is the mid-point of the line segment joining $A(6, \ 5)$ and $B(4, \ y)$, find y .

260. If the distance between the points $(3, \ 0)$ and $(0, \ y)$ is 5 units and y is positive, then what is the value of y ?

261. If $P(x, \ 6)$ is the mid-point of the line segment joining $A(6, \ 5)$ and $B(4, \ y)$, find y .

262. If $P(2, \ p)$ is the mid-point of the line segment joining the points $A(6, \ -5)$ and $B(-2, \ 11)$, find the value of p.

263. If $A(1, \ 2), \ B(4, \ 3)$ and $C(6, \ 6)$ are the three vertices of a parallelogram $ABCD$, find the coordinates of fourth vertex D.

264. What is the distance between the points $A(\sin\theta - \cos\theta, \ 0)$ and $B(0, \sin\theta + \cos\theta)$?

265. The distance between the points $(\cos\theta, \sin\theta)$ and $(\sin\theta, \ -\cos\theta)$ is

A. (a) $\sqrt{3}$

B. (b) $\sqrt{2}$

C. (c) 2

D. (d) 1

Answer: null

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266. The distance between the points $(a\cos 25°, \ 0)$ and $(0, \ a\cos 65°)$

is (a) a (b) $2a$ (c) $3a$ (d) None of these

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267. If x is a positive integer such that the distance between points

$P(x, \ 2)$ and $Q(3, \ -6)$ is 10 units, then $x = $ (a) 3 (b) -3 (c) 9 (d) -9

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268. If the distance between the points $(4, \ p)$ and $(1, \ 0)$ is 5, then $p =$

(a) ± 4 (b) 4 (c) -4 (d) 0

269. The length of a line segment is of 10 units and the coordinates of one end-point are $(2, \ -3)$. If the abscissa of the other end is 10, find the ordinate of the other end.

270. The perimeter of the triangle formed by the points $(0, \ 0)$, $(1, \ 0)$ and $(0, \ 1)$ is $1 \pm \sqrt{2}$ (b) $\sqrt{2} + 1$ (c) 3 (d) $2 + \sqrt{2}$

271. If three points $(0, 0)$, $(3, \sqrt{3})$ and $(3, \lambda)$ form an equilateral triangle, then $\lambda =$ (a) 2 (b) -3 (c) -4 (d) None of these

272. If the points $(k, 2k)$, $(3k, 3k)$ and $(3, 1)$ are collinear, then k (a) $\dfrac{1}{3}$ (b) $-\dfrac{1}{3}$ (c) $\dfrac{2}{3}$ (d) $-\dfrac{2}{3}$

273. The coordinates of the point on X -axis which are equidistant from the points $(-3, 4)$ and $(2, 5)$ are (a) $(20, 0)$ (b) $(-23, 0)$ (c) $\left(\dfrac{4}{5}, 0\right)$ (d) None of these

274. If $(-1, 2)$, $(2, -1)$ and $(3, 1)$ are any three vertices of a parallelogram then the fourth vertex (a,b) will be such that (a) a=2 , b=0 (b) a= - 2, b=0 (c) a= - 2, b=6 (d) a=0, b=4

275. If $A(5, 3)$, $B(11, -5)$ and $P(12, y)$ are the vertices of a right triangle right angled at P , then $y = -2, 4$ (b) $-2, -4$ (c) $2, -4$ (d) $2, 4$

276. If $(x, 2)$, $(-3, -4)$ and $(7, -5)$ are collinear, then $x =$ (a) 60 (b) 63 (c) -63 (d) -60

277. If points $(t, 2t)$, $(-2, 6)$ and $(3, 1)$ are collinear, then $t =$ (a) $\dfrac{3}{4}$
(b) $\dfrac{4}{3}$ (c) $\dfrac{5}{3}$ (d) $\dfrac{3}{5}$

278. If the area of the triangle formed by the points $(x, 2x)$, $(-2, 6)$

and $(3, 1)$ is 5 square units, then $x =$ (a) $\dfrac{2}{3}$ (b) $\dfrac{3}{5}$ (c) 3 (d) 5

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

(a) 1 (b) 2 (c) 0 (d) -1

280. If the centroid of a triangle is $(1, 4)$ and two of its vertices are

$(4, -3)$ and $(-9, 7)$, then the area of the triangle is 183 sq. units (b)

$\dfrac{183}{2}$ sq. units (c) 366 sq. units (d) $\dfrac{183}{4}$ sq. units

281. The line segment joining points $(-3, -4)$, and $(1, -2)$ is divided by y-axis in the ratio (a) $1 : 3$ (b) $2 : 3$ (c) $3 : 1$ (d) $2 : 3$

282. The ratio in which $(4, 5)$ divides the join of $(2, 3)$ and $(7, 8)$ is $-2 : 3$ (b) $-3 : 2$ (c) $3 : 2$ (d) $2 : 3$

283. The ratio in which the x-axis divides the segment joining $(3, 6)$ and $(12, -3)$ is (a) $2 : 1$ (b) $1 : 2$ (c) $-2 : 1$ (d) $1 : -2$

284. If the centroid of the triangle formed by the points (a, b), (b, c) and (c, a) is at the origin, then $a^3 + b^3 + c^3 = $ abc (b) 0 (c) $a + b + c$ (d) $3\,abc$

285. If points $(1, 2)$, $(-5, 6)$ and $(a, -2)$ are collinear, then $a = $ (a)-3 (b) 7 (c) 2 (d) -2

286. If the centroid of the triangle formed by $(7, x)$, $(y, -6)$ and $(9, 10)$ is at $(6, 3)$, then $(x, y) = $ (a) $(4, 5)$ (b) $(5, 4)$ (c) $(-5, -2)$ (d) $(5, 2)$

287. The distance of the point $(4, \ 7)$ from the x-axis is (a) 4 (b) 7 (c) 11 (d) $\sqrt{65}$

288. The distance of the point $(4, \ 7)$ from the y-axis is 4 (b) 7 (c) 11 (d) $\sqrt{65}$

289. If P is a point on x-axis such that its distance from the origin is 3 units, then the coordinates of a point Q on OY such that $OP = OQ$, are (a) $(0, \ 3)$ (b) $(3, \ 0)$ (c) $(0, \ 0)$ (d) $(0, \ -3)$

290. If the point $P(x, y)$ is equidistant from $A(5, 1)$ and $B(-1, 5)$, then $(a) 5x = y$ (b) $x = 5y$ (c) $3x = 2y$ (d) $2x = 3y$

291. If points $A(5, p)$, $B(1, 5)$, $C(2, 1)$ and $D(6, 2)$ form a square $ABCD$, then $p =$ (a) 7 (b) 3 (c) 6 (d) 8

292. The coordinates of the circumcentre of the triangle formed by the points $O(0, 0)$, $A(a, 0)$ and $B(0, b)$ are (a, b) (b) $\left(\dfrac{a}{2}, \dfrac{b}{2}\right)$ (c) $\left(\dfrac{b}{2}, \dfrac{a}{2}\right)$ (d) (b, a)

293. The coordinates of a point on x-axis which lies on the perpendicular bisector of the line segment joining the points $(7, \ 6)$ and $(-3, \ 4)$ are $(0, \ 2)$ (b) $(3, \ 0)$ (c) $(0, \ 3)$ (d) $(2, \ 0)$

294. If the centroid of the triangle formed by the points $(3, \ -5)$, $(-7, 4)$, $(10, \ -k)$ is at the point $(k, \ -1)$, then $k =$

295. If $(-2, \ 1)$ is the centroid of the triangle having its vertices at $(x, \ 0)$, $(5, \ -2)$, $(-8, \ y)$, then $x, \ y$ satisfy the relation $3x + 8y = 0$ (b) $3x - 8y = 0$ (c) $8x + 3y = 0$ (d) $8x = 3y$

296. The coordinates of the fourth vertex of the rectangle formed by the points $(0, 0)$, $(2, 0)$, $(0, 3)$ are (a) $(3, 0)$ (b) $(0, 2)$ (c) $(2, 3)$ (d) $(3, 2)$

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297. The length of a line segment joining $A(2, -3)$ and B is 10 units. If the abscissa of B is 10 units, then its ordinates can be (a) 3 or -9 (b) -3 or 9 (c) 6 or 27 (d) -6 or -27

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298. The ratio in which the line segment joining $P(x_1, y_1)$ and $Q(x_2, y_2)$ is divided by x-axis is (a) $y_1 : y_2$ (b) $y_1 : y_2$ (c) $x_1 : x_2$ (d) $x_1 : x_2$

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299. The ratio in which the line segment joining points $A(a_1, b_1)$ and $B(a_2, b_2)$ is divided by y-axis is (a) $-a_1 : a_2$ (b) $a_1 : a_2$ (c) $b_1 : b_2$ (d) $-b_1 : b_2$

300. If the coordinates of one end of a diameter of a circle are $(2, 3)$ and the coordinates of its centre are $(-2, 5)$, then the coordinates of the other end of the diameter are (a) $(-6, 7)$ (b) $(6, -7)$ (c) $(6, 7)$ (d) $(-6, -7)$

301. The coordinates of the point P dividing the line segment joining the points $A(1, 3)$ and $B(4, 6)$ in the ratio $2 : 1$ are $(2, 4)$ (b) $(3, 5)$ (c) $(4, 2)$ (d) $(5, 3)$

302. In Fig. , the area of ABC (in square units) is (a) 15 (b) 10 (c) 7.5 (d) 2.5

303. The point on the x-axis which is equidistant from points $(-1, \ 0)$ and $(5, \ 0)$ is

A. (a) $(0, \ 2)$

B. (b) $(2, \ 0)$

C. (c) $(3, \ 0)$

D. (d) $(0, \ 3)$

Answer: null

304. If $A(4, 9), \quad B(2, 3)$ and $C(6, 5)$ are the vertices of triangle ABC, then the length of median through C is (a) 5 units (b) $\sqrt{10}$ units (c) 25 units (d) 10 units

305. If $P(2, 4), \quad Q(0, 3), \quad R(3, 6)$ and $S(5, y)$ are the vertices of a parallelogram $PQRS$, then the value of y is (a) 7 (b) 5 (c) -7 (d) -8

306. If $A(x, 2), \quad B(-3, -4)$ and $C(7, -5)$ are collinear, then the value of x is