



# MATHS

## BOOKS - VIKRAM PUBLICATION ( ANDHRA PUBLICATION)

### LOCUS

#### Solved Problems

1. Find the equation of the locus of a point which is at a distance 5 from  $(-2, 3)$  in the

xoy plane.



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2. Find the locus of P If the distance of P from  $(3,0)$  is twice the distance of P from  $(-3,0)$



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3. Find the the locus of the third vertex of a right angled triangle, the ends of whose hypotenuse are  $(4,0)$  and  $(0,4)$ .



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4. Find the locus of  $P(x,y)$  which moves such that its distances from  $A(5,-4), B(7,6)$  are in the ratio 2:3.



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5.  $A(2,3)$  and  $B(-3,4)$  be two given points. Find the equation of the locus of  $P$  so that the area of the triangle  $PAB$  is 8.5 sq.units.



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## Textual Exercises Exercise 1 A

1. Find the equation of locus of a point which is at a distance 5 from A (4, - 3).



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2. Find the equation to the locus of points equidistant from the points

(-3,2),(0,4)



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3. Find the locus of P for which the distance from P to origin is double the distance from P to the point (1,2).



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4. Find the locus of the point which is equidistant from the coordinate axes.



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5. Find the equation of locus of a point equidistant from A (2, 0) and the Y- axis.



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6. Find the equation to the locus of the point, the square of whose distance from origin is 4 times its y-coordinate.



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7. Find the locus of the point P such that  $PA^2 + PB^2 = 2c^2$  :where "A(a,0),B(-a,0) and  $0 < |a| < |c|$ .



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8. Find the equation of locus of P, if the line segment joining (2,3) & (-1,5) subtends a right angle at P.



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9. The ends of the hypotenuse of right angled triangle are  $(0, 6)$ ,  $(6, 0)$  . The locus of the third vertex is



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10. Find the equation of locus of a point such that the difference of whose distances from  $(-5,0)$  and  $(5,0)$  is 8



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11. Find the equation of locus of P, if

$$A = (4, 0), B = (-4, 0) \quad \text{and}$$

$$|PA - PB| = 4$$



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12. Find the equation of locus of a point, the sum of whose distances from  $(0, 2)$  and  $(0, -2)$  is 6.



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**13.** Find the equation of the locus of P, if  $A = (2,3)$ ,  $B = (2,-3)$  and  $PA + PB = 8$ .



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**14.**  $A(5,3)$  and  $B(3,-2)$  are 2 fixed points. Find the equation of locus of P, so that the area of  $\triangle PAB$  is 9sq. Units.



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**15.** Find the equation of the locus of a point, which forms a triangle of area 2 with the points  $A(1, 1)$  and  $B(-2, 3)$ .



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**16.** If the distance from 'P' to the points  $(2,3)$  and  $(2,-3)$  are in the ratio 2:3, then find the equation of the locus of P.



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17.  $A(1, 2)$ ,  $B(2, -3)$ ,  $C(-2, 3)$  are 3 points. A point  $P$  moves such that  $PA^2 + PB^2 = 2PC^2$ . Show that the equation to the locus of  $P$  is  $7x - 7y + 4 = 0$ .



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