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National Institute of Open Schooling (NIOS)
Senior Secondary Course
Lesson – 16: Conic Sections
Worksheet -16

1. Describe different components of parabola with diagrammatically and list standard equation of parabola.

2. Find equation of the parabola, whose vertex is (0, 0) and passing through the point (7, 6) and symmetric about y-axis.

3. A double ordinate of the parabola $y^2 = 4ax$ is of length 8a. Show that the lines from the vertex to its ends are at right angles.

4. Find the equation of the parabola whose focus is (1, 1) and tangent at the vertex is $x + y - 1 = 0$

5. The eccentricity of an ellipse is $\frac{1}{2}$ and focus is (–1, 1) and directrix is $x - y + 3 = 0$. Find the equation of this ellipse.

6. In an ellipse, the length of major axis is 26 and foci (±8, 0). Then find equation of ellipse.

7. A point 'P' moves such that the sum of its distance from two fixed points is a constant. Prove that the locus of the point 'P' is an ellipse.

8. Describe different components of hyperbola with diagrammatically and identify the equation of hyperbola.

9. Find the equation of the hyperbola whose conjugate axis is 5 units and the distance between the foci is 15.

10. Find the area of the triangle formed by the lines joining the vertex of the parabola $x^2 = 12y$ to the ends of its lotus rectum.