

INTERNATIONAL INDIAN SCHOOL BURAIDAH
MATHS-XI/WS /CONIC SECTIONS/2024-25

1-Find the centre and radius of the circle whose equation $3x^2 + 3y^2 + 6x - 4y - 1 = 0$
Ans: centre (-1,2/3) and radius =4/3

2-Find the equation of a circle with centre (-1, 2) and radius 4
Ans: $x^2 + y^2 + 2x - 4y - 11 = 0$

3-Find the equation of the circle passing through (0,0) and making intercepts 5 and 7 on coordinate axes.
Ans : $x^2 + y^2 - 5x - 7y = 0$

4-Find the equation of the circle which passes through (2,-2) and (3,4) and whose centre lies on the line $x + y = 2$
Ans: $(x - 0.7)^2 + (y - 1.3)^2 = 12.58$

5-Find the coordinate of focus and length of latus rectum of the parabola $3y^2 = 8x$
Ans: focus (2/3,0) LR: 8/3

6-Find the co-ordinate of the vertices ,foci ,eccentricity and length of latus rectum of the hyperbola
 $\frac{x^2}{25} - \frac{y^2}{4} = 1$ Ans: $e : \frac{\sqrt{29}}{5}$,LR : 8/5,vertices : $(\pm 5, 0)$,foci : $(\pm \sqrt{29}, 0)$

7- Find the co-ordinate of the foci,the vertices ,the length of the major axis ,the minor axis ,the eccentricity and the length of the latus rectum of the ellipse
 $\frac{x^2}{36} + \frac{y^2}{16} = 1$

Ans : foci : $(\pm \sqrt{20}, 0)$,vertices $(\pm 6, 0)$,length of major axis : 12 , length of minor axis : 8
 $e : \frac{\sqrt{5}}{3}$,length of latus rectum : 16/3

8-Find the equation of parabola whose vertex (0,0) ,passing through (5 ,2) and symmetric with respect to Y-axis.
Ans: $2x^2 = 25y$

9-Find the equation of ellipse that satisfies the given conditions ;Length of minor axis is 16 and foci (0, ±6)
Ans : $\frac{x^2}{64} + \frac{y^2}{100} = 1$

10-Find the equation of ellipse whose eccentricity is $\frac{2}{3}$, latus rectum is 5 and the centre is (0,0)
Ans ; $\frac{4x^2}{81} + \frac{y^2}{45} = 1$

11-Find the equation of hyperbola with eccentricity $\frac{3}{2}$ and foci (±2 , 0)
Ans: : $\frac{x^2}{4} - \frac{y^2}{5} = \frac{4}{9}$

12-If the lines $2x - 3y = 5$ and $3x - 4y = 7$ are the diameter of a circle of area 154 square units ,then obtain the equation of the circle.
Ans: : $x^2 + y^2 - 2x + 2y = 47$

13-Find the eccentricity of the hyperbola : $9y^2 - 4x^2 = 36$
Ans : $\frac{\sqrt{13}}{2}$

14-An equilateral triangle is inscribed in the parabola $y^2 = 4ax$,where one vertex is at the vertex of the parabola ,Find the side of the triangle
Ans : $8\sqrt{3}a$

15-An arc is in the form of a semi -ellipse .It is 8 m wide and 2 m high at the centre .Find the height of the arch at a point 1.5 m from one end.
Ans: 1.56 m

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