

SUBJECT- MATHEMATICS,
CLASS-XI
CHAPTER-(CONIC SECTIONS)
WORKSHEET (STANDARD)

A. Answer the following:

1. Write the equation of the diameter of the circle $x^2+y^2-2x-2y=0$ which passes through the origin.
2. Write the value of λ so that the circle $x^2+y^2+2gx+2fy+\lambda=0$ is concentric with the circle $x^2+y^2+6x+8y+5=0$ and passes through the point.
3. Find the length of intercept on y-axis of the circle $x^2+y^2+4x-7y+12=0$.
4. Name the curve which is the locus of a point which moves such that its distance from a fixed point is equal to its distance from a fixed line.
5. Distance of a focal chord of the parabola $y^2=4x$ from the vertex is 2 units, then find its length.
6. Find the eccentricity of the ellipse, if the distance between the foci is equal to the length of the latus rectum.
7. Find the eccentricity of the ellipse if its minor axis is equal to the distance between the foci.
8. If $\frac{x^2}{1-a} + \frac{y^2}{2-a} - 2=0$ represents an ellipse, then write the range of values of a .
9. If the eccentricity of the hyperbola $x^2-y^2\sec^2\theta = 5$ is $\sqrt{3}$ times the eccentricity of the ellipse $x^2\sec^2\theta+y^2=25$, then write the value of $\tan\theta$.
10. If e_1 be the eccentricity of the ellipse $\frac{x^2}{32} + \frac{y^2}{9} = 1$ and e_2 be that of hyperbola $\frac{x^2}{16} - \frac{y^2}{9} = 1$, write the value of $2e_1^2+e_2^2$.

B. Fill in the blanks:

11. The foci of a hyperbola coincide with the foci of the ellipse $x^2/25 + y^2/9 = 1$. If eccentricity of the hyperbola is 2, then its equation is

12. The equation of the hyperbola whose one focus is $(-1,-1)$ and corresponding directrix is $x-y+1=0$ and eccentricity $\sqrt{2}$ is.....

13. The equation of the hyperbola referred to its axes as co-ordinate axes whose conjugate axis is 7 and passes through the point $(3,-2)$ is.....

14. The equation of ellipse passing through the point $(2,1)$ having eccentricity is

15. An ellipse has OB as semi-minor axis, F and F' are its foci and the angle FBF' is a right angle.

Then the eccentricity of the ellipse is.....

16. If $(at_1^2, 2at_1)$ and $(at_2^2, 2at_2)$ are the ends of a focal chord of the parabola, then the values of t_1t_2 is.....

17. PQ is a double ordinate of a parabola $y^2=4ax$, then the locus of its trisection is.....

18. A water jet from a fountain reaches its maximum height of 4 metres at a distance of 0.5 metres from the vertical passing through the point O of the water outlet. The height of the jet above the horizontal OX at a distance 0.75 metre from the point O is.....

19. The Centroid of an equilateral is $(1,2)$ and its one vertex is $(4,7)$, then the equation of the circumcircle of the equilateral triangle is.....

20. The centre of the circle $(x-a)(x-c)+(y-b)(y-d)=0$ is.....

