Math 26-T

Exercises- Conics

1. Parabola:
2. Find the focus, vertex, directrix, axis, and endpoints of the LR of each of the ff. parabolas:
3. x2­ = 16y
4. y2 = – 10x
5. y2 + 2y – 4x + 5 = 0
6. x2 – 4x + 8y + 4 = 0
7. y2 + 2x – 4y + 7 = 0
8. Find the standard equation of the parabola with the following properties. Sketch the parabola.
9. directrix : x = 0, F (6, 0)
10. directrix : y = 0, V (0, 3)
11. Endpoints of LR: (–3, 3) and (5, 3)

and parabola opens upward

1. directrix : x = –3 , Endpoints of LR : (0, 3) and (0, –3).
2. Ellipse:
3. Find the foci, vertices, lengths of major and minor axes and the eccentricity. Sketch the ellipse.
4. 16x2 + 25y2 = 400
5. 16x2 + 9y2 = 144
6. 16x2 + 25y2 = 100
7. 9x2 + 25y2 + 18x – 100y – 116 = 0
8. 9x2 + 4y2 – 18x + 8y + 4 = 0
9. Find the standard equation of the ellipse with the following properties:
10. Vertices: (2, –3) and (2, 5)

Foci: (2, –2) and (2, 4)

1. Foci: ( –2, 3) and (4, 3)

length of major axis is 10

1. Foci: (2, 3) and (2, –7) and e = ⅔
2. Hyperbola:
3. Find the Center, Vertices, Foci, eccentricity and equations of the asymptotes. Sketch the hyperbola.
4. 25x2 – 4y2 = 100
5. 9y2 – x2 = 16
6. x2 – y2 + 8x – 2y – 21 = 0
7. 4y2 – 9x2 + 16y + 18x – 29 = 0
8. Find the equation of the hyperbola satisfying the given conditions. Draw the hyperbola.
9. One focus at (26, 0)

Asymptotes: 12y = ±5x

1. Center (3, –5); Vertex (7, –5); Focus (8, –5).
2. Foci: (–1, 4), (7, 4) and e = 3.
3. V: (2, 7) and (2, –1); e = √ 3 .