

## Chapter 10 Review

**ALL PROBLEMS MUST BE COMPLETED ON SEPARATE PAPER OTHERWISE; THIS REVIEW SHEET WILL NOT BE GRADED. SHOW ALL WORK FOR CREDIT. REVIEW IS DUE ON TEST DAY.**

**Find the equation of the parabola described.**

- 1) Focus at (25, 0); directrix the line  $x = -25$                       2) Focus at (3, 0); vertex at (0, 0)
- 3) Vertex at (0, 0); axis of symmetry the x-axis; containing the point (9, 8)

**Find the vertex, focus, and directrix of the parabola. Graph the equation.**

- 4)  $x^2 = -12y$                                       5)  $y^2 = 18x$

**Find the foci and vertices of the ellipse.**

- 6)  $\frac{x^2}{49} + \frac{y^2}{25} = 1$                               7)  $\frac{x^2}{4} + \frac{y^2}{81} = 1$

**Find an equation for the ellipse.**

- 8) Center at (0, 0); focus at (-5, 0); vertex at (6, 0)

**Solve the problem.**

- 9) A reflecting telescope contains a mirror shaped like a paraboloid of revolution. If the mirror is 20 inches across at its opening and is 4 feet deep, where will the light be concentrated?

**Find the foci and vertices of the ellipse.**

- 10)  $\frac{x^2}{49} + \frac{y^2}{36} = 1$

**Graph the ellipse and locate the foci.**

- 11)  $\frac{x^2}{9} + \frac{y^2}{4} = 1$                               12)  $\frac{x^2}{4} + \frac{y^2}{16} = 1$

**Solve the problem.**

- 13) A hall 130 feet in length was designed as a whispering gallery. If the ceiling is 25 feet high at the center, how far from the center are the foci located? **Find an equation for the hyperbola described.**

- 14) Vertices at (0,  $\pm 10$ ); asymptotes at  $y = \pm \frac{5}{3}x$

**SKIP #15 AND #16**

**Graph the curve whose parametric equations are given.**

- 17)  $x = 2t - 1$ ,  $y = t^2 + 2$ ;  $-4 \leq t \leq 4$

**Find a rectangular equation for the plane curve defined by the parametric equations and state the domain.**

- 18)  $x = 3t$ ,  $y = t + 1$ ;  $-2 \leq t \leq 3$                               19)  $x = 5 \sin t$ ,  $y = 5 \cos t$ ;  $0 \leq t \leq 2\pi$