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1. Find the focus of the parabola: $y^{2}=-8 x$
2. Identify the focus and directrix of the parabola given by $y^{2}=-4 x$.
3. Identify the focus and directrix of the parabola given by $x^{2}=12 y$.
4. Graph the parabola. $y^{2}-8 x=0$ Include the vertex, focus, directrix, and four points other than the vertex.

5. Write the standard form of the equation of the parabola with its vertex at $(0,0)$ and focus at $(0,-4)$
6. Write the standard form of the equation of the parabola with its vertex at $(0,0)$ and directrix $y=5$.
7. Write the standard form of the equation of the parabola with its vertex at $(0,0)$ and directrix $x=2$.
8. Suppose a parabola has vertex $(0,0)$ and the distance from the vertex to the focus is 5 units. How many possible parabolas fit this description? Write the equations of all the possible parabolas that fit this description.
9. Sketch the graph of $x^{2}+y^{2}=49$. Give the center and 4 points on the circle.

10. Write the standard form of the equation of the circle with radius 6 and center at $(0,0)$
11. Sketch the graph of $2 x^{2}+2 y^{2}=32$. Give the center and 4 points on the circle.

12. Write the standard form of the equation of the circle that passes through the point $(0,1)$ with its center at the origin.
13. Write the standard form of the equation of the circle that passes through the point $(3,4)$ with its center at the origin.
14. Write the standard form of the equation of the circle that passes through the point $(1,-6)$ with its center at the origin.
15. Determine the foci, vertices, and covertices of the graph of $\frac{x^{2}}{9}+\frac{y^{2}}{16}=1$
16. Sketch the graph of $\frac{x^{2}}{25}+\frac{y^{2}}{9}=1$. Include the vertices, covertices, and foci.

17. Sketch the graph of $\frac{x^{2}}{4}+\frac{y^{2}}{9}=1$. Include the vertices, covertices, and foci.

18. Sketch the graph of $16 x^{2}+y^{2}=16$. Include the vertices, covertices, and foci.

19. Write an equation of an ellipse with vertices of $(-7,0)$ and $(7,0)$, and co-vertices $(0,-4)$ and $(0,4)$.
20. Write an equation of the ellipse with a vertex at $(9,0)$, a co-vertex at $(0,5)$, and center at $(0,0$.
21. Write an equation of the ellipse with a vertex at $(0,8)$, a co-vertex at $(4,0)$, and center at $(0,0)$.
22. Write an equation of the ellipse with a vertex at $(5,0)$, a focus at $(4,0)$, and center at $(0,0)$.
23. Writing: How is the equation of an ellipse like the equation of a circle? How are the equations different?
