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### 10.2 HW: Parabolas Homework

Determine whether each parabola opens upward, downward, to the left, or to the right.

1. $-4 y=x^{2}$
2. $16 x=y^{2}$
3. $y^{2}=-2 x$
4. ${ }^{1} /{ }_{16} x^{2}=y$

Identify the focus and directrix. Then graph the parabola.
5. $-32 y=x^{2}$
6. $12 x=y^{2}$
7. $-8 y-x^{2}=0$
8. $y^{2}=-4 x$

Write an equation of a parabola with vertex at the origin and the following focus or directrix.
9. focus at $(-2,0)$
10. focus at $(0,4)$
11. directrix at $x=3$
12. directrix at $\mathrm{y}=-7$

Write the equation whose graph is the set of all points in the plane equidistant from the given point and the given line.
13. $F(0,8)$ and $y=-8$
14. $F(-5,0)$ and $x=5$

Identify the vertex, focus, and directrix of each equation. Then sketch the graph.
15. $-4(y+1)=(x-3)^{2}$
16. $8(x-4)=(y-5)^{2}$

