

**Find the vertex, axis of symmetry, focus, and directrix.**

1.  $(y + 2)^2 = -16(x + 3)$

2.  $(x - 3)^2 = 8(y - 1)$

3.  $(y + 2)^2 = 16(x - 2)$

4.  $(y + 1)^2 = -12(x + 3)$

5.  $(x - 3)^2 = 4(y + 4)$

**Write the equation for each PARABOLA.**

6. directrix  $y = -8$ , focus  $(0,0)$

7. directrix  $x = 1$ , vertex  $(-3, 1)$  \*\* pay attention to what you are given

8. vertex  $(3, 0)$ , focus  $(3, 2)$

9. vertex  $(-1, 2)$ , focus  $(-1, 4)$

10. focus  $(2, 4)$ , directrix  $y = -2$