

Vertex Form of Parabolas

Use the information provided to write the vertex form equation of each parabola.

1) $y = x^2 + 16x + 71$

2) $y = x^2 - 2x - 5$

3) $y = -x^2 - 14x - 59$

4) $y = 2x^2 + 36x + 170$

5) $y = x^2 - 12x + 46$

6) $y = x^2 + 4x$

7) $y = x^2 - 6x + 5$

8) $y = (x + 5)(x + 4)$

9) $\frac{1}{2}(y + 4) = (x - 7)^2$

10) $6x^2 + 12x + y + 13 = 0$

11) $162x + 731 = -y - 9x^2$

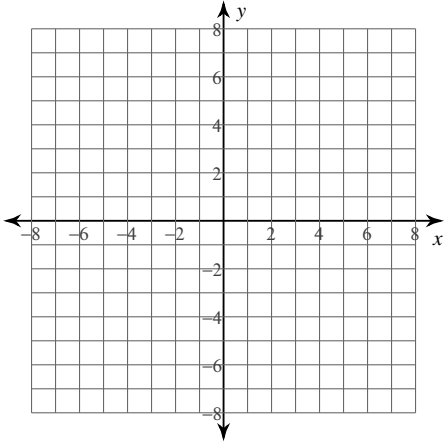
12) $x^2 - 12x + y + 40 = 0$

13) $y = x^2 + 10x + 33$

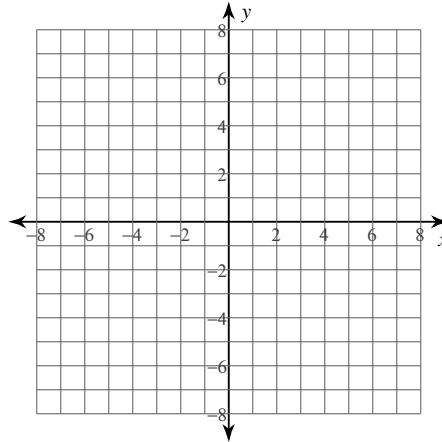
14) $y + 6 = (x + 3)^2$

Identify the vertex and axis of symmetry of each. Then sketch the graph.

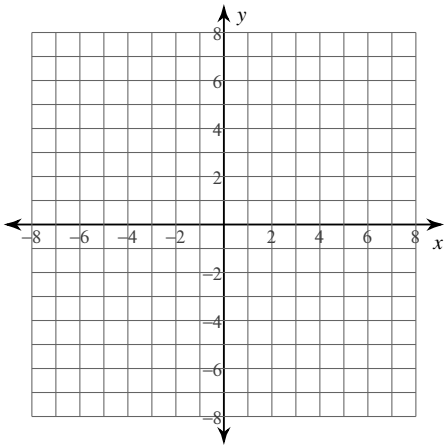
15) $f(x) = -3(x - 2)^2 - 4$



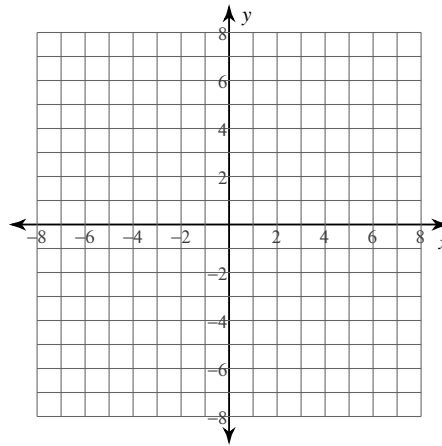
16) $f(x) = -\frac{1}{4}(x - 1)^2 + 4$



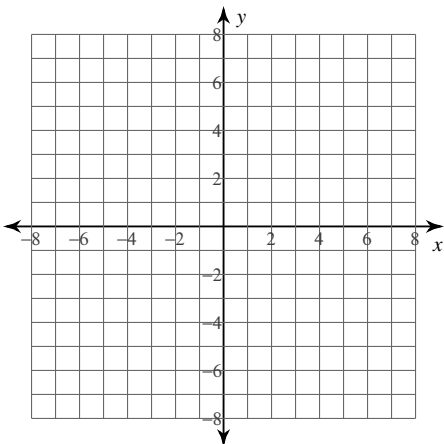
17) $f(x) = \frac{1}{4}(x + 4)^2 + 3$



18) $f(x) = \frac{1}{4}(x + 5)^2 + 2$



19) $f(x) = -2(x + 5)^2 - 3$



20) $f(x) = (x + 2)^2 - 1$

