

Writing Equations in Vertex Form

Date _____ Period _____

Write the quadratic equation for the following in Vertex Form.

- 1) Vertex $(-1, 9)$ and goes through the point $(3, 7)$

- 2) Vertex $(3, -3)$ and goes through the point $(7, -9)$

- 3) Vertex $(0, -5)$ and goes through the point $(-2, -1)$

- 4) Vertex $(4, 0)$ and goes through the point $(1, 6)$

- 5) Vertex $(-3, -4)$ and goes through the point $(0, 1)$

- 6) Vertex $(3, 4)$ and goes through the point $(0, 1)$

- 7) Vertex $(-2, 7)$ and goes through the point $(-1, 5)$

8) Vertex $(5, -7)$ and goes through the point $(3, -5)$

9) Vertex $(-3, 4)$ and goes through the point $(-4, -4)$

10) Vertex $(-4, -1)$ and goes through the point $(-6, 3)$

11) Vertex $(4, 2)$ and goes through the point $(5, 4)$

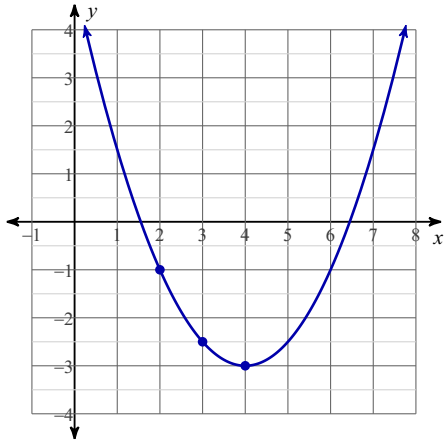
12) Vertex $(3, 8)$ and goes through the point $(6, -1)$

13) Vertex $(2, -5)$ and goes through the point $(4, -1)$

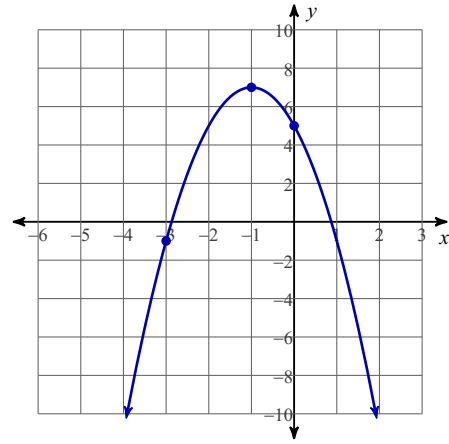
14) Vertex $(2, 0)$ and goes through the point $(3, 2)$

Write the quadratic equation for the given graph in Vertex Form.

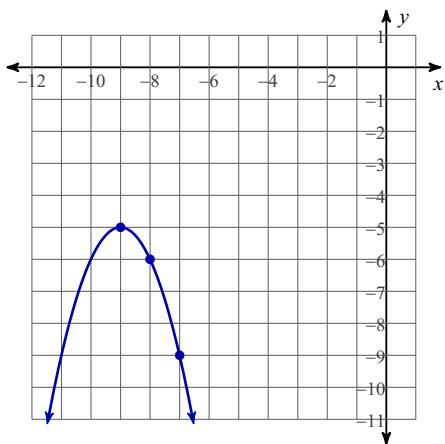
15)



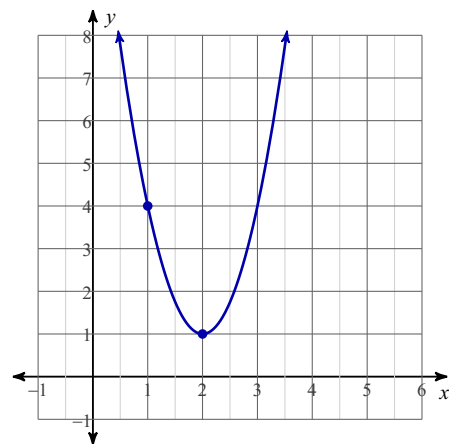
16)



17)

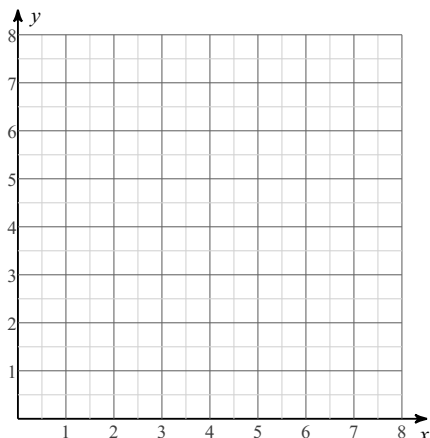


18)

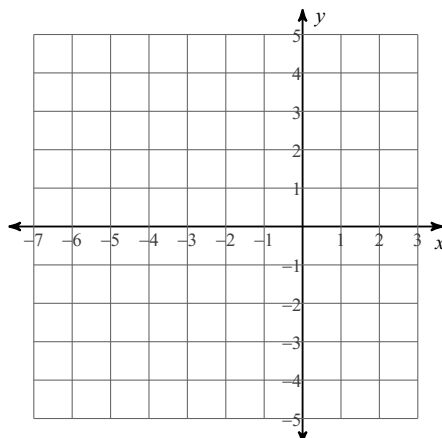


Sketch the graph of each function. List all key features.

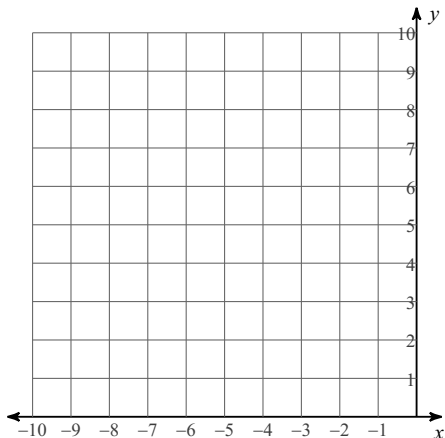
19) $y = (x - 2)^2 + 3$



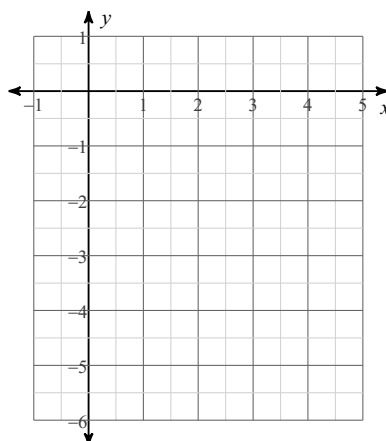
20) $f(x) = -2(x + 3)^2 + 4$



21) $f(x) = 2(x + 2)^2 + 1$



22) $y = -\frac{1}{2}(x - 2)^2 - 2$



Factor each completely.

23) $m^2 - 16$

24) $v^2 - 1$

25) $6k^2 - 36k - 240$

26) $a^2 + 17a + 70$

27) $m^2 - 10m$

28) $x^2 + 10x - 20$