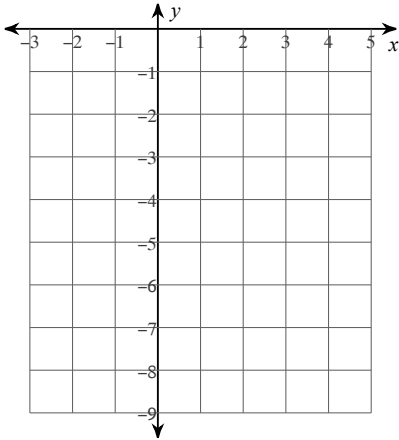


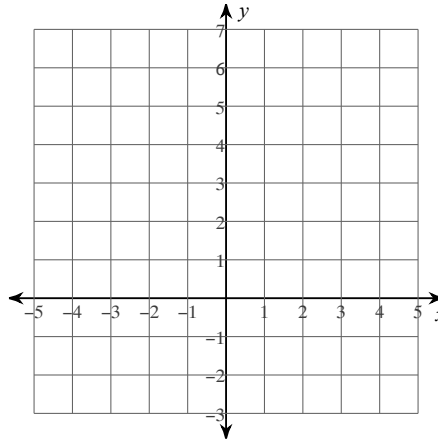
8.4B Graphing and Transforming Quadratics in Vertex Form

Sketch the graph of each function.

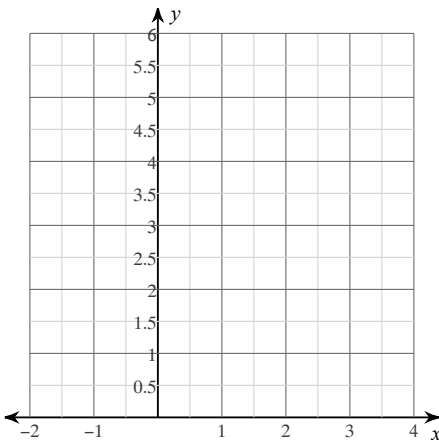
1) $y = -(x - 1)^2 - 4$



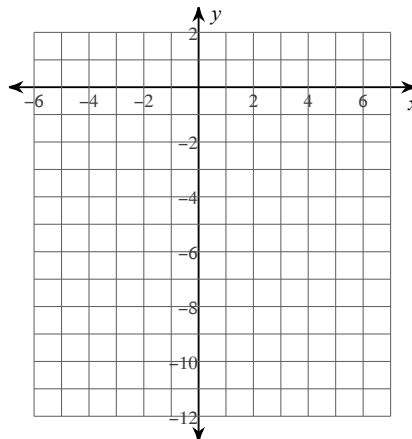
2) $y = 2(x - 3)^2 - 2$



3) $y = \frac{1}{2}(x - 2)^2 + 3$



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



Compare each function to the parent function $y = x^2$.

5) $y = -2(x - 2)^2 - 3$

6) $y = (x + 7)^2 + 4$

7) $y = -\frac{3}{5}(x + 4)^2 - 5$

Write a function for the quadratic using the transformation described below.

8) Opens down, vertex at $(-3, 5)$, stretched by a factor of your choice.

9) Vertex is moved right 8 and down 10, opens up, compressed by a factor of $\frac{2}{3}$

10) Has a minimum, vertex at $(-2, 1)$, stretched by a factor of $\frac{7}{5}$

11) Opens down, compressed by a factor of your choice, vertex at $(9, -6)$

CHALLENGE QUESTIONS: Using the vertex form of a quadratic $y = a(x - h)^2 + k$, write an equation for each.

12) vertex: $(1, 2)$; passes through $(3, 10)$

13) vertex: $(-2, -4)$; passes through $(-1, -6)$