

Graphing Quadratic Equations

Question 1. Determine the vertex of the following parabolas and whether the parabolas open upward or downward.

a) $y = (x - 1)^2 + 2$

b) $y = -(x + 6)^2 - 3$

c) $y = 4(x + 4)^2 + \frac{1}{2}$

d) $y = -\frac{1}{2}\left(x - \frac{1}{3}\right)^2$

e) $y = 200(x - 50)^2 - 75$

Question 2. Write the following quadratic equations in vertex form. Determine the vertex of each parabola and whether the parabola opens upward or downward.

a) $y = x^2 - 2x + 1$

b) $y = x^2 + 6x + 5$

c) $y = -x^2 - 2x + 2$

d) $y = -4x^2 + 4x + 3$

e) $y = 25x^2 + 20x + 16$

Question 3. Graph the following parabolas.

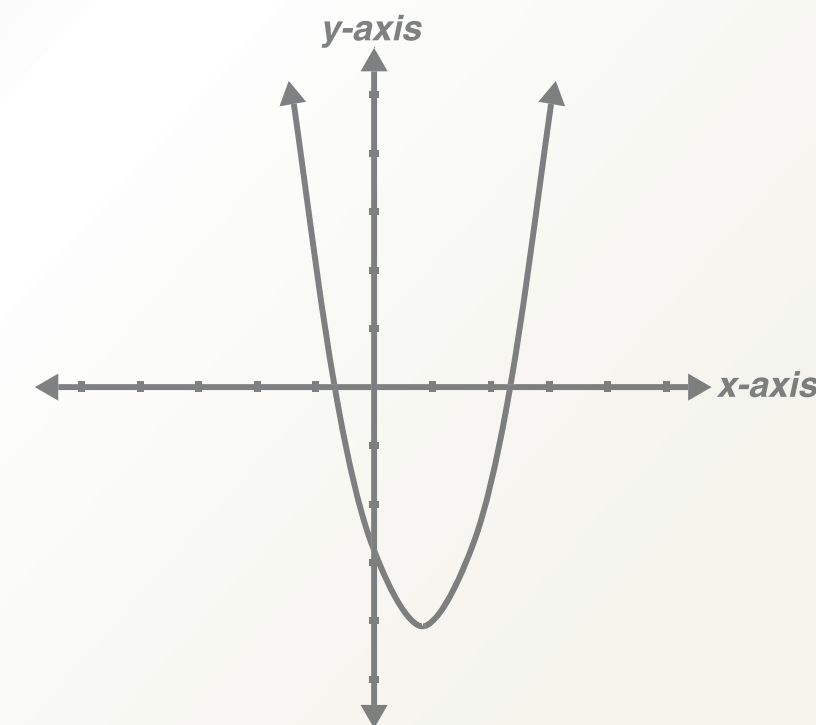
a) $y = (x + 1)^2 - 2$

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

c) $y = 2x^2 - 8x + 5$

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

e) $y = -2x^2 - 12x - 14$



You can check your answers on pages 280-281.