Use a graphing calculator to determine the quadratic equation for each set of three points that lie on a parabola.

7. (−4, 12), (−2, −14), (2, 6)

$f(x) = 3x^2 + 5x - 16$

2

8. (5, −56), (1, −4), (−10, −26)

9. (−8, 8), (−4, 6), (4, 38)

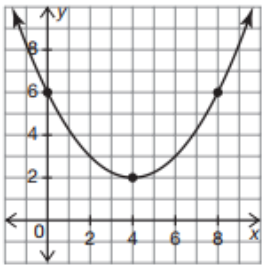
10. (−2, 3), (2, −9), (5, −60)

11. (0, 3), (−5, −2.4), (15, −7.8)

12. (−2, 13), (1, −17), (7, 31)

This is the back

3.



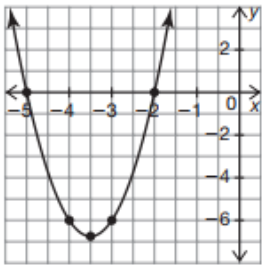
$f(x) = 0.25(x - 4)^2 + 2$

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

$f(x) = -0.25(x + 4)^2 + 2$

$f(x) = 0.25(x - 2)^2 + 4$

4.



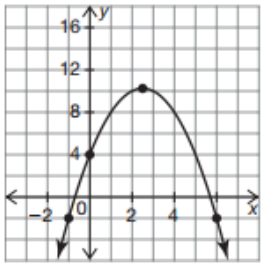
$f(x) = -3(x + 2)(x - 5)$

$f(x) = 3(x + 2)(x + 5)$

$f(x) = 3(x - 2)(x - 5)$

$f(x) = -3(x - 2)(x - 5)$

5.



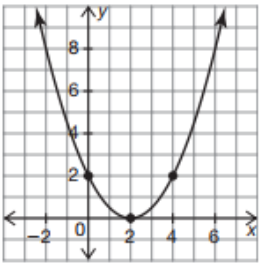
$f(x) = x^2 + 5x - 4$

$f(x) = -x^2 + 5x + 10$

$f(x) = x^2 + 5x + 4$

$f(x) = -x^2 + 5x + 4$

6.



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

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

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

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

Use the given information to determine the most efficient form you could use to write the quadratic function. Write standard form, factored form, or vertex form.

7. vertex (3, 7) and point (1, 10)
vertex form

8. points (1, 0), (4, −3), and (7, 0)

9. y-intercept (0, 3) and axis of symmetry $-\frac{3}{8}$

10. points (−1, 12), (5, 12), and (−2, −2)

11. roots (−5, 0), (13, 0) and point (−7, 40)

12. maximum point (−4, −8) and point (−3, −15)