2-2 Additional Practice

Standard Form of a Quadratic Function

Find the vertex of a quadratic function written in standard form.

1. $f(x) = 3x^2 + 18x + 32$ **2.** $f(x) = x^2 + 2x - 5$ **3.** $f(x) = -3x^2 + 18x - 27$

Find the vertex, axis of symmetry, and *y*-intercept of the functions, then sketch the graph.

4. $f(x) = x^2 - 8x + 19$

Vertex
Axis of symmetry
Y-intercept

5. $f(x) = -2x^2 - 4x + 6$

Vertex
Axis of symmetry
Y-intercept

Interpret the graph of a quadratic function.

6. A small independent movie company determines the profit *P* for producing *n* DVD copies of a recent release is $P = -0.02n^2 + 3.40n - 16$. *P* is the profit in thousands of dollars and *n* is in thousands of units.

a. How many DVDs should the company produce to maximize the profit?

b. What will the maximum profit be?
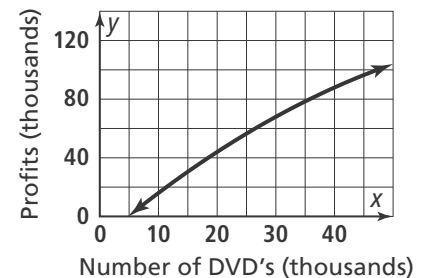
What is the equation of a parabola that passes through the following points?

7. (1, −1), (2, −5), (3, −7)   **8.** (2, −8), (3, −8), (6, 4)   **9.** (−3, 2), (1, −6), (4, 9)