Name _____ Date _____

2.7 Practice B

In Exercises 1–3, write an equation of the parabola in vertex form.

1. passes through $(4, -7)$ and has vertex $(1, -6)$

2. passes through $(5, -4)$ and has vertex $(-2, 5)$

3. passes through $(2, 2)$ and has vertex $(-1, -1)$

In Exercises 4–6, write an equation of the parabola in intercept form.

4. x-intercepts of 12 and 8; passes through $(9, 5)$

5. x-intercepts of -7 and -1; passes through $(1, 1)$

6. x-intercepts of -9 and 9; passes through $(0, 4)$

7. Describe and correct the error in writing an equation of the parabola.

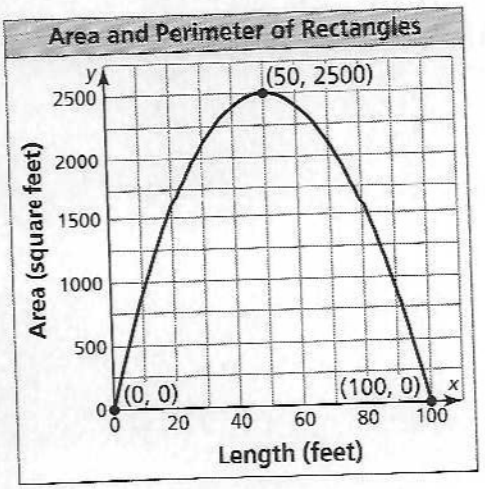
✗ Vertex: $(3, -5)$

Passes through $(1, -7)$

$$y = a(x - h)^2 + k$$
$$-5 = a(3 - 1)^2 + (-7)$$
$$-5 = 4a - 7$$
$$2 = 4a$$
$$\frac{1}{2} = a$$

The equation is $y = \frac{1}{2}(x - 1) - 7$.

8. The graph shows the area y (in square feet) of rectangles that have a perimeter of 200 feet and a length of x feet.



   a. Interpret the meaning of the vertex in this situation.

   b. Write an equation for the parabola to predict the area of the rectangle when the length is 2 feet.

   c. Compare the average rates of change in the area from 0 to 50 feet and 50 to 100 feet.