Name_____ Date_____

8.5 Extra Practice

In Exercises 1–4, graph the quadratic function. Label the vertex, axis of symmetry, and *x*-intercepts. Find the domain and range of the function.

1. $m(x) = (x + 5)(x + 1)$

2. $y = -4(x - 3)(x - 1)$

3. $y = x^2 - 4$

4. $f(x) = x^2 + 2x - 15$

In Exercises 5 and 6, find the zero(s) of the function.

5. $y = 6x^2 - 6$

6. $y = x^2 + 9x + 20$

In Exercises 7–10, use zeros to graph the function.

7. $f(x) = x^2 - 3x - 10$

8. $f(x) = -2(x + 3)(x - 1)$

9. $f(x) = x^3 - 9x$

10. $f(x) = 2x^3 - 12x^2 + 10x$

11. Write a quadratic function in standard form that has the zeros 9 and -5.

12. Write a cubic function in standard form that has the *x*-intercepts -5, -1, and 2, and passes through $(1, 36)$.

13. Let k be a constant. Find the zeros of the function $f(x) = kx^2 - k^2x - 12k^3$ in terms of k.

Name _____ Date _____

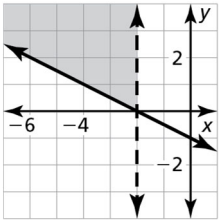
8.5 Review & Refresh

In Exercises 1 and 2, determine whether the sequence is *arithmetic*, *geometric*, or *neither*. Explain your reasoning.

1. $-6, -30, -150, -750, \ldots$

2. $18, 11, 4, -3, -10, \ldots$

3. Write a system of linear inequalities represented by the graph.



4. Find the zeros of $f(x) = -\frac{1}{5}(x + 7)(x - 8)$.

5. Graph $f(x) = -3x + 3$ and $g(x) = f(x + 1)$. Describe the transformation from the graph of f to the graph of g.

In Exercises 6 and 7, find the vertex and the axis of symmetry of the graph of the function.

6. $y = 5(x + 2)^2 - 3$

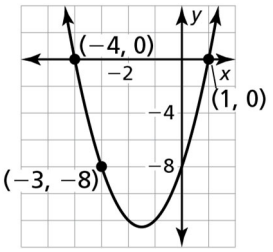
7. $f(x) = -\frac{1}{4}x^2 - 2x - 3$

8. Write a recursive rule for the sequence.

n	1	2	3	4
a_n	$\frac{1}{4}$	1	4	16

9. Graph $r(x) = 3x^2 - 9$. Compare the graph to the graph of $f(x) = x^2$.

10. Write a quadratic function represented by the graph.



8.5 Self-Assessment

Use the scale to rate your understanding of the learning target and the success criteria.

1 I do not understand. 2 I can do it with help. 3 I can do it on my own. 4 I can teach someone else.

	Rating	Date
8.5 Using Intercept Form		
Learning Target: Graph and use functions in intercept form.	1 2 3 4	
I can graph quadratic functions of the form $f(x) = a(x - p)(x - q)$.	1 2 3 4	
I can find zeros of functions using intercept form.	1 2 3 4	
I can use characteristics to graph and write quadratic functions and cubic functions.	1 2 3 4	