Math 433	NOTES	Name:
Greenberg	Writing Quadratic Functions	Date:

Today we will do some practice with writing quadratic functions of the form $f(x) = ax^2 + bx + c$

1. (a) Write the equation a quadratic function with zeros of x = -5 and x = 3.

(b) Are there any other possible quadratic functions with the same zeros?

(c) Write the equation of the quadratic function with the same zeros that passes through the point (-3, -1).

2. Write the equation of a quadratic function with x-intercepts of -4 and 6 with a *maximum value* of 5.

3. Write the equation of a quadratic function f(x) where $f(2+\sqrt{6})=0$, $f(2-\sqrt{6})=0$ with a *range* of $y \ge -10$

4. Find the domain and range of the function $f(x) = -x^2 + 8x - 9$

Practice Problems – Write the equation of a quadratic function f(x) with the given information

5. *x*-intercepts (-4, 0) and (16, 0) minimum value -5

6.
$$f(-1+\sqrt{5}) = 0, f(-1-\sqrt{5}) = 0,$$

 $f(1) = 3$

7. f(-1) = 0, f(4) = 0maximum value 10 8. f(-4) = 0, f(-10) = 0range $y \le 8$

Multiple Choice Questions:

$$y = a(x-2)(x+4)$$

In the quadratic equation above, a is a nonzero constant. The graph of the equation in the *xy*-plane is a parabola with vertex (c, d). Which of the following is equal to d?

- B) -8a
- C) -5a
- D) -2a

What is the range of $f(x) = x^2 + 8x + 23$?

(a) $y \ge -4$ (c) y = 7(b) $y \ge 4$ (d) $y \ge 7$