Meramec Math 160C Quiz 12 Solution Spring 2013

NAME: _____Score_____/10

Please **print** your name

Consider the function whose rule is $f(x) = x^2 + 2x - 3$. Answer the following questions about this function. Use correct notation and write any formula before using it.

1. f is a quadratic function.

2. The graph of f is a parabola which opens up.

3. The y-intercept of the graph of f is (0, –3).

4. Compute the first coordinate of the vertex of the graph.

$$\frac{-b}{2a} = \frac{-2}{2} = -1$$

A – b

5. Compute the second coordinate of the vertex of the graph.

$f(-1) = (-1)^2 + 2(-1) - 3 = -4$

6. Compute the discriminant of the function.

$b^2 - 4ac = 2^2 - (4)(1)(-3) = 16$

7. (2 pts) Find the x-intercepts of the graph of f.

x-intercepts are real solutions for f(x) = 0.

So we must solve $x^2 + 2x - 3 = 0$ which can be done with factoring and The Zero Factor Property.

$x^2 + 2x - 3 = 0$

$(x - 1)(x + 3) = 0$

By the Zero Factor Property

$x = 1$ or $x = -3$

The x-intercepts are (1,0) and (–3, 0)

8. (2 pts) Sketch the graph of f. **Label all important points with their coordinates.**