Meramec Math 160C Quiz 7 Solution Fall 2013

NAME: _____Score_____/15

Please **print** your name **SHOW YOUR WORK !** **State reasons in words when appropriate.**

1. T **F** The discriminant of a quadratic equation in one variable $ax^2 + bx + c = 0$ is $b^2 + 4ac$.

2. **T** F If a quadratic equation in one variable has two complex solutions they are conjugates.

3. **T** F It is possible for a quadratic equation in one variable to have exactly one real solution.

4. T **F** It is possible for a quadratic equation in one variable to have exactly one complex solution.

5. T **F** The graph of a quadratic equation in one variable is a parabola.

6. A quadratic equation in one variable is an equation which can be written in the form $ax^2 + bx + c = 0$ where a, b, and c are real number and a is not 0.

7. Solve the equation $x^2 - 6x - 7 = 0$.

$x^2 - 6x - 7 = 0$

$(x + 1)(x - 7) = 0$

By The Zero Factor Property

$x + 1 = 0$ OR $x - 7 = 0$

$x = -1$ OR $x = 7$

The solution set for $x^2 - 6x - 7 = 0$ is {- 1, 7}

8. Solve the equation $x^2 + x + 1 = 0$.

Use the quadratic formula $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-1 \pm \sqrt{1^2 - 4(1)(1)}}{2(1)} = \frac{-1 \pm \sqrt{-3}}{2} = \frac{-1 \pm i\sqrt{3}}{2}$$

The solution set for $x^2 + x + 1 = 0$ is $\left\{\dfrac{-1 \pm i\sqrt{3}}{2}\right\}$