

NAME: \_\_\_\_\_ Score \_\_\_\_\_/10

**SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION**

1. The norm of a complex number  $a + bi$  is \_\_\_\_\_.
2. The conjugate of  $3 - 4i$  is \_\_\_\_\_.
3. When both sides of an equation are multiplied by an expression containing a variable the solution set of the resulting equation \_\_\_\_\_ the solution set of the original equation.
4. Complete the following statement of the quadratic formula.  
The solutions of a quadratic equation  $ax^2 + bx + c = 0$  are given by \_\_\_\_\_.
5. T F  $5x^3 + 4x - 7 = 0$  is a quadratic equation.
6. T F  $i = -1$ .
7. Compute the sum:  $(2 - 3i) + \left(\frac{3}{4} + 5i\right)$ . Your answer should involve improper fractions but no mixed numbers and no decimals.

8. Compute the product:  $(-2 - 3i)(7 - 5i)$ .

9. Circle each irrational number in the following list.

$$15 \quad \sqrt{\frac{3}{4}} \quad \sqrt{8} \quad \sqrt{16} \quad \sqrt{6} \quad -3 \quad \pi \quad -32.75 \quad 3.14$$

10. When both sides of Equation (A)  $\frac{2}{x-5} = \frac{3x}{x+1}$  are multiplied by the expression  $(x-5)(x+1)$  we obtain Equation (B)  $2x + 2 = 3x^2 - 15x$ .

Suppose the solution set for Equation A is the set K and the solution set for Equation B is the set M. What is the relation between the two solution sets K and M? No computations are required. In fact, computations will tell me you do not understand the concept.