

NAME: _____ Score _____/10

Please **print** your name**SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION**

(1 points)

1. T **F** If both sides of an equation are multiplied by $3x$, the resulting equation is equivalent to the original.

(1 points)

2. T **F** The conjugate of a complex number is a real number.

3. (2 points) List five numbers which are in the interval $(0, 1]$.

1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ or any other positive number less than or equal to 1

4. (2 points) Which of the following are rational numbers? **Circle your answers.**

4 $\frac{4}{5}$ $\frac{\sqrt{4}}{5}$ $\frac{4}{\sqrt{5}}$ 3.14 π $\sqrt{2}$

5. (2 points) What is the length of the line segment joining the points $(3, -2)$ and $(1, 5)$? **State the formula you intend to use before you use it, use the = symbol everywhere it is appropriate, show your work, and give an exact answer not an approximation.**

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} = \sqrt{(3 - 1)^2 + (5 + 2)^2} = \sqrt{2^2 + 7^2} = \sqrt{53}$$

6. (2 points) Compute the product $(5 + 3i)(-2 + 5i)$

$$(5 + 3i)(-2 + 5i) = -10 + 25i - 6i + 15i^2 = -25 + 19i$$