

MATH 1314

Test 2 Review

10 Multiple Choice Questions: Test 2 (60 points)

4 Free Response Questions: Test 2 FR (40 points)

Example 1: The length of a rectangle is twice its width. If the perimeter of the rectangle is 180 feet, find the dimensions of the rectangle.

Example 2: Solve the following system of equations for y :

$$4x + y = 47$$

$$6x - 2y = -10$$

Example 3: State all solutions to the equation:

$$x^2 + 40 = 0$$

Example 4: Solve the following equation:

$$x^2 + 5x - 7 = 0$$

Example 5: Solve the following by completing the square:

$$x^2 - 8x + 20 = 0$$

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Example 6: Solve:

$$\frac{3}{10x} - \frac{1}{6x} = 1$$

Example 7: Simplify $\frac{3-2i}{2+i}$

Example 8: Simplify

A. $(5 - 4i)(-1 - 2i)$

B. $(2 - 3i) - (-1 + 5i)$

Example 9: Solve the following inequality and express your answer in interval notation.

$$-2 < 3 - 4x \leq 7$$

Example 10: Solve the following inequality and express your answer in interval notation.

$$|7x + 8| - 4 < -3$$

Example 11: Find the solution of the equation

$$2 + 3 | 4x - 1 | \geq 14 .$$

Example 12: Find all solutions to the equation:

$$|3 - 2x| = 6$$

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Example 13: Tom has a drawer with dimes, nickels and pennies in it. He has an equal number of each kind of coin. Tom counted his money and found that he has a total of \$2.40 in the drawer. How many nickels does Tom have?

Example 14: Solve the following for x:

$$x^6 - 9x^3 - 36 = 0$$

Example 15: Solve the following for x:

$$\sqrt{x + 5} - x = 5$$

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Example 17: Solve the following for x:

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$$\frac{(x - 8)(x + 4)}{x - 3} \leq 0$$

Example 18: Solve the following inequality:

$$2x^2 + 5x - 3 \leq x^2 - 2x - 15$$