

Name _____

Each of the 19 questions is worth 5 points plus 1 points for each of 5 homework problems for a total of 100

Solve the equation.

1) $3x + 4 - 7(x + 1) = -(6x - 2)$

Solve for the specified letter.

2) $I = \frac{nE}{nr + R}$, for n

Solve the problem.

- 3) An experienced accountant can prepare a tax return in 10 hours. A novice accountant can do the job in 16 hours. How long will it take them to do the job working together?

- 4) In a chemistry class, 8 liters of a 4% silver iodide solution must be mixed with a 10% solution to get a 6% solution. How many liters of the 10% solution are needed?

Perform the indicated operations. Simplify the answer.

5) $\frac{\sqrt{-12} \cdot \sqrt{-3}}{\sqrt{4}}$

Find the product. Write the answer in standard form.

6) $(7 - 6i)(8 - 4i)$

Solve the equation by the zero-factor property.

7) $4x^2 - 4x - 8 = 0$

Solve by completing the square.

8) $x^2 + 4x + 40 = 0$

Solve the equation using the quadratic formula.

9) $30x^2 + 84x + 55 = 0$

Solve the problem.

- 10) The height of a box is 8 inches. The length is three inches more than the width. Find the width if the volume is 560.

- 11) A boat is 92 feet from the base of cliff. If the distance from the top of the cliff to the boat is 23 less than twice the height of the cliff to the water. Find the height of the cliff. Round to the nearest tenth of a foot if necessary.

Solve the equation.

$$12) \frac{4}{x+3} + \frac{11}{x+4} = \frac{13}{x^2 + 7x + 12}$$

$$13) 1 + \frac{1}{x} = \frac{72}{x^2}$$

$$14) \sqrt{2x + 5} - \sqrt{x - 2} = 3$$

$$15) x^{1/2} = 4x^{1/4}$$

Solve the quadratic inequality. Write the solution set in interval notation.

$$16) x^2 - 4x - 21 \leq 0$$

Solve the rational inequality. Write the solution set in interval notation.

$$17) \frac{x-7}{x+8} \leq 0$$

Solve the equation.

$$18) |9x + 2| = |3 - 10x|$$

Solve.

$$19) |5x - 6| - 8 = -2$$