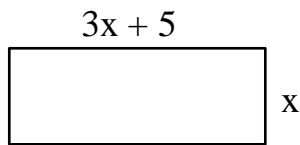


## Algebra I Worksheet #2 Unit 3 Selected Solutions

Solve each of the following problems algebraically. For each problem, you **must**

- a. **represent** all unknowns in terms of the same variable,
- b. write an **equation** for the problem,
- c. **solve** your equation showing your steps neatly organized, and
- d. **answer** the question using a complete sentence.

9. The length of a rectangle is 5 inches more than three times its width. The perimeter of the rectangle is 82 inches. What are the dimensions of the rectangle?



$$P = 2L + 2W$$

$$2(3x + 5) + 2x = 82$$

$$6x + 10 + 2x = 82$$

$$8x + 10 = 82$$

$$8x = 72$$

$$x = 9$$

$$3x + 5 = 32$$

**The rectangle is 32 inches long and 9 inches wide.**

11. A collection of ordinary dimes and quarters is worth \$5.05. If the number of quarters is 5 less than the number of dimes, then how many coins of each type are there in the collection?

	number of coins	value of the coins
dimes	$x$	$10x \text{ ¢}$
quarters	$x - 5$	$25(x - 5) \text{ ¢}$
collection		$505 \text{ ¢}$

$$10x + 25(x - 5) = 505$$

$$10x + 25x - 125 = 505$$

$$35x - 125 = 505$$

$$35x = 630$$

$$x = 18$$

$$x - 5 = 13$$

**There are 18 dimes and 13 quarters.**