Math Test – Algebra 1 – Solving One-Variable Equations

1. Solve the following equations for x.

   a. $2x - 7 = 15$ b. $4x - 3 = 2x + 7$ c. $8x - 11 = -3x$

   d. $5 - 4x = 4 - 5x$ e. $10x + 32 = -(4 + 2x)$ f. $7 = 8x - 9$

2. Mike has 3 bushels of apples and 4 bushels of oranges in his house. If a bushel of apples is equal to 10 apples and Mike has a total of 62 apples and oranges in his house, how many oranges are in a bushel of oranges?

3. Write your own one-variable equation below. Then solve it. Show every step and explain why and how you got the answer.

Math Test – Algebra 1 – Solving One-Variable Equations – Answer Key

1. Solve the following equations for x.

	a. $2x - 7 = 15$	b. $4x - 3 = 2x + 7$	c. $8x - 11 = -3x$
Answers:	$2x = 22$	$2x = 10$	$-11 = -11x$
	$x = 11$	$x = 5$	$11 = x$
	d. $5 - 4x = 4 - 5x$	e. $10x + 32 = -(4 + 2x)$	f. $7 = 8x - 9$
Answers:	$9 = -x$	$12x = -36$	$16 = 8x$
	$-9 = x$	$x = -3$	$2 = x$

2. Mike has 3 bushels of apples and 4 bushels of oranges in his house. If a bushel of apples is equal to 10 apples and Mike has a total of 62 apples and oranges in his house, how many oranges are in a bushel of oranges?

Answer: $3(10) + 4x = 62 \rightarrow 30 + 4x = 62 \rightarrow 4x = 32 \rightarrow x = 8$

8 oranges/bushel

3. Write your own one-variable equation below. Then solve it. Show every step and explain why and how you got the answer.

   Answers will be evaluated on a case-by-case basis and will be awarded full credit for being correct, descriptive in their steps, and showing knowledge and understanding of this process.