### Bell Work

Translate each sentence into an equation:

- 1. A number *b* divided by three is six less than *c*.
- 2. Fifteen more than *z* times 6 is 11 less than *y* times 2.

# Chapter 2.2 and 2.3 (One-Step and Multi-Step Equations)

## Objectives:

- -Solve one-step equations.
- -Solve multi-step equations.

**Solving an equation** - finding the specific value(s) for the variable that make(s) the equation true

x = 5 is the solution for 2x + 7 = 17

### **Guidelines when Solving Equations:**

- 1) Use Inverse Operations
  - -subtraction and addition
  - -multiplication and division
- 2) Keep the Equation Balanced
- -If you do something on one side of the equal sign, you must do it on the other side!

# Solving One-Step Equations

Ex. 1 
$$h - 12 = -27$$

$$h - 12 = -27$$
  
 $h - 12 + 12 = -27 + 12$   
 $h = -15$ 

Ex. 3 
$$-75 = -15b$$

$$\frac{-75}{-15} = \frac{-15b}{-15}$$

$$5 = b$$

Ex. 
$$2 c + 102 = 36$$

$$c + 102 = 36$$
  
 $c + 102 - 102 = 36 - 102$   
 $c = -66$ 

**Ex 4.** Solve 
$$\left(-1\frac{3}{8}\right)k = \frac{2}{3}$$

$$\left(-\frac{11}{8}\right)k = \frac{2}{3}$$

$$-\frac{8}{11}\left(-\frac{11}{8}\right)k = -\frac{8}{11}\left(\frac{2}{3}\right)$$

$$k = -\frac{16}{33}$$

## Practice

1. 
$$-\frac{a}{4} = 16$$

$$3. -75 = -15b$$

2. 
$$129 + k = -42$$

4. 
$$-\frac{1}{4} = \frac{2}{3}b$$

# **Solve Multi-Step Equations**

Ex. 1 
$$2q + 11 = 3$$

$$2q + 11 = 3$$

$$2q + 11 - 11 = 3 - 11$$

$$2q = -8$$

$$\frac{2q}{2} = \frac{-8}{2}$$

$$q = -4$$

**Ex. 2 Solve** 
$$\frac{k+9}{12} = -2$$

$$\frac{12}{12}\left(\frac{k+9}{12}\right) = \frac{12}{12}\left(-2\right)$$

$$k + 9 = -24$$

$$k + 9 - 9 = -24 - 9$$

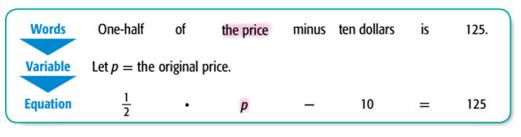
$$k = -33$$

### **Practice**

1. 
$$6v + 7 = -5$$

$$2. \quad \frac{-4j - (-4)}{-6} = 12$$

Susan had a \$10 coupon for the purchase of any item. She bought a coat that was 1/2 its original price. After using the coupon, Susan paid \$125 for the coat before taxes. What was the original price of the coat? Write an equation for the problem. Then solve the equation.



$$\frac{1}{2}p - 10 = 125$$
 Original equation 
$$\frac{1}{2}p - 10 + 10 = 125 + 10$$
 Add 10 to each side. 
$$\frac{1}{2}p = 135$$
 Simplify. 
$$2\left(\frac{1}{2}p\right) = 2(135)$$
 Multiply each side by 2. 
$$p = 270$$
 Simplify.

Answer: The original price of the coat was \$270.

Homework	
Lesson 2.3 (Page 94)	