

Lesson 8: Solving Equations with Distributive Property

Remember:

- Use Distributive Property FIRST!!!
 - Signs mean: positive & negative
- Use Order of Operations BACKWARDS to solve the equation.
- Integer Rules apply.

* Use PEMDAS when checking your solution!

Ex. 1: Solve each equation. Check your solution.

A. $4(y - 3) = 4$

$$4(\overbrace{y} - \overbrace{3}) = 4$$

$$4y - 12 = 4$$

$$\quad +12 \quad +12$$

$$\frac{4y}{4} = \frac{16}{4}$$

$$\boxed{y = 4}$$

check: $4(y - 3) = 4$

$$4(4 - 3) = 4$$

$$4(1) = 4$$

$$\checkmark 4 = 4$$

B. $-2(g - 1) = -4$

$$-2(\overbrace{g} - \overbrace{1}) = -4$$

$$-2g + 2 = -4$$

$$\quad -2 \quad -2$$

$$\frac{-2g}{-2} = \frac{-6}{-2}$$

$$\boxed{g = 3}$$

check: $-2(g - 1) = -4$

$$-2(3 - 1) = -4$$

$$-2(2) = -4$$

$$\checkmark -4 = -4$$

C. $3(2 - x) = -12$

$$3(\overbrace{2} - \overbrace{x}) = -12$$

$$6 - 3x = -12$$

$$-6 \quad -6$$

$$\frac{-3x}{-3} = \frac{-18}{-3}$$

$$\boxed{x = 6}$$

check: $3(2 - x) = -12$

$$3(2 - 6) = -12$$

$$3(-4) = -12$$

$$\checkmark -12 = -12$$

D. $(p - 8)(-2) = 8$

$$-2(\overbrace{p} - \overbrace{8}) = 8$$

$$-2p + 16 = 8$$

$$\quad -16 \quad -16$$

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

$$\boxed{p = 4}$$

check: $(p - 8)(-2) = 8$

$$(4 - 8)(-2) = 8$$

$$(-4)(-2) = 8$$

$$\checkmark 8 = 8$$

E. $-3(-x - 4) = -3$

$$-3(\overbrace{-x} - \overbrace{4}) = -3$$

$$3x + 12 = -3$$

$$\quad -12 \quad -12$$

$$\frac{3x}{3} = \frac{-15}{3}$$

$$\boxed{x = -5}$$

check: $-3(-x - 4) = -3$

$$-3(-(-5) - 4) = -3$$

$$-3(5 - 4) = -3$$

$$-3(1) = -3$$

$$\checkmark -3 = -3$$

F. $(y + 7)(-3) = -7$

$$-3(\overbrace{y} + \overbrace{7}) = -7$$

$$-3y - 21 = -7$$

$$\quad +21 \quad +21$$

$$\frac{-3y}{-3} = \frac{14}{-3}$$

$$\boxed{y = -4\frac{2}{3}}$$

Convert to improper fraction rather than decimal!