

## Math 8: Algebraic Equations & Distributive Property Quiz

Name \_\_\_\_\_

Date: \_\_\_\_\_

Level: \_\_\_\_\_

*You must include "let" statements, an equation, solution, and sentence with ALL word problems*

### Level 1 – 2:

1. Solve the following one – step equations:

a)  $x + 4 = -5$

b)  $10 = y - 2$

c)  $6x = 12$

d)  $\frac{x}{(-5)} = 3$

2. Expand using the distributive property.

a)  $-4(x + 6)$

b)  $8(x + 6)$

c)  $3(x - 2)$

d)  $-2(3 - y)$

### Level 3 – 4:

3. Solve the following two – step equations:

a)  $-3m + 8 = 14$

b)  $-4x + 4 = 32$

c)  $5 = 2x + 25$

d)  $2x + 34 = 75$

4. Solve using the distributive property.

a)  $5(a + 2) = -5$

b)  $4(p - 6) = -4$

c)  $10(y + 3) = 10$

d)  $-7(a + 3) = -14$

5. Expand using the distributive property. Then simplify by combining "like" terms.

a)  $3(2x + x - 5y)$

b)  $5(2a + 6 - 3a + 5)$

## Math 8: Algebraic Equations & Distributive Property Quiz

### Level 5 – 6:

6. Five friends go the movies. They each buy a ticket and a bucket of popcorn for \$2. The total cost is \$85. How much was each ticket? **Use the distributive property.**
  
7. Melissa is bringing cookies and candies to the bake sale on Wednesday. The total number of cookies brought is twice the sum of the number of candies and 6. She brought 100 cookies to the sale. How many candies did Melissa bring?
  
8. Rylen is playing a computer game. He started with some points. On his first turn, he lost half of his points. On his second turn all his points are tripled. He ends up with a total of 60 points. How many points did Rylen start with?
  
9. Ms. Lo decided to go shopping at Staples. She spends \$23 dollars on erasers and buys 10 pencils. Her total cost was \$57. What was the cost of each pencil?

### Level 7 – 8:

10. Solve the following equations.

a)  $-4(x + 2) = 2x - 26$

b)  $-7(x + 2) = 5x - 26$

## Math 8: Algebraic Equations & Distributive Property Quiz

Name \_\_\_\_\_

Date: \_\_\_\_\_

Level: \_\_\_\_\_

You must include "let" statements, an equation, solution, and sentence with ALL word problems

### Level 1 - 2:

1. Solve the following one - step equations:

a)  $x + 4 = -5$

$$\begin{aligned} x + 4 - 4 &= -5 - 4 \\ x &= -9 \end{aligned}$$

b)  $10 = y - 2$

$$\begin{aligned} 10 + 2 &= y - 2 + 2 \\ 12 &= y \end{aligned}$$

c)  $6x = 12$

$$\begin{aligned} \frac{6x}{6} &= \frac{12}{6} \\ x &= 2 \end{aligned}$$

d)  $\frac{x}{(-5)} = 3$

$$\begin{aligned} (-5) \frac{x}{(-5)} &= 3(-5) \\ x &= -15 \end{aligned}$$

2. Expand using the distributive property.

a)  $-4(x + 6)$

$$-4x - 24$$

b)  $8(x + 6)$

$$8x + 48$$

c)  $3(x - 2)$

$$3x - 6$$

d)  $-2(3 - y)$

$$-6 + 2y$$

### Level 3 - 4:

do arrows !!

3. Solve the following two - step equations:

a)  $-3m + 8 = 14$

$$\begin{aligned} -3m &= 6 \\ \frac{-3m}{-3} &= \frac{6}{-3} \end{aligned}$$

$$m = -2$$

b)  $-4x + 4 = 32$

$$\begin{aligned} -4x &= 28 \\ \frac{-4x}{-4} &= \frac{28}{-4} \end{aligned}$$

$$x = -7$$

c)  $5 = 2x + 25$

$$\begin{aligned} -20 &= 2x \\ \frac{-20}{2} &= \frac{2x}{2} \end{aligned}$$

$$-10 = x$$

d)  $2x + 34 = 75$

$$2x = 41$$

$$x = \frac{41}{2}$$

or  $20 \frac{1}{2}$

4. Solve using the distributive property.

a)  $5(a + 2) = -5$

$$5a + 10 = -5$$

$$\begin{aligned} 5a &= -15 \\ \frac{5a}{5} &= \frac{-15}{5} \end{aligned}$$

$$a = -3$$

b)  $4(p - 6) = -4$

$$4p - 24 = -4$$

$$\begin{aligned} 4p &= 20 \\ \frac{4p}{4} &= \frac{20}{4} \end{aligned}$$

$$p = 5$$

c)  $10(y + 3) = 10$

$$10y + 30 = 10$$

$$\begin{aligned} 10y &= -20 \\ \frac{10y}{10} &= \frac{-20}{10} \end{aligned}$$

$$y = -2$$

d)  $-7(a + 3) = -14$

$$-7a - 21 = -14$$

$$-7a = 7$$

$$\frac{-7a}{-7} = \frac{7}{-7}$$

$$a = -1$$

5. Expand using the distributive property. Then simplify by combining "like" terms.

a)  $3(2x + x - 5y)$

$$= 6x + 3x - 15y$$

$$= 9x - 15y$$

b)  $5(2a + 6 - 3a + 5)$

$$= 10a + 30 - 15a + 25$$

$$= -5a + 55$$

## Math 8: Algebraic Equations & Distributive Property Quiz

### Level 5-6:

6. Five friends go the movies. They each buy a ticket and a bucket of popcorn for \$2. The total cost is \$85. How much was each ticket? Use the distributive property.

$$\begin{aligned} 5(x + 2) &= 85 \\ 5x + 10 &= 85 \\ 5x &= 75 \\ x &= 15 \end{aligned}$$

★ Each ticket was 15.00\$!

7. Melissa is bringing cookies and candies to the bake sale on Wednesday. The total number of cookies brought is twice the sum of the number of candies and 6. She brought 100 cookies to the sale. How many candies did Melissa bring?

$$\begin{aligned} 2(c + 6) &= 100 \\ 2c + 12 &= 100 \\ 2c &= 88 \\ c &= 44 \end{aligned}$$

★ Melissa brought 44 candies!

8. Rylen is playing a computer game. He started with some points. On his first turn, he lost half of his points. On his second turn all his points are tripled. He ends up with a total of 60 points. How many points did Rylen start with?

$$\begin{aligned} 3\left(\frac{x}{2}\right) &= 60 \\ \left(\frac{2}{3}\right)\frac{3}{2}x &= 60\left(\frac{2}{3}\right) \end{aligned}$$

$$x = \frac{120}{3}$$

$$x = 40$$

Very hard!

9. Ms. Lo decided to go shopping at Staples. She spends \$23 dollars on erasers and buys 10 pencils. Her total cost was \$57. What was the cost of each pencil?

$$\begin{aligned} 10x + 23 &= 57 \\ \frac{10x}{10} &= \frac{34}{10} \end{aligned}$$

$$x = 3.4 \text{ or } 3.40\$$$

### Level 7-8:

10. Solve the following equations.

a)  $-4(x + 2) = 2x - 26$

$$\begin{aligned} -4x - 8 &= 2x - 26 \\ -6x &= -18 \\ \frac{-6x}{-6} &= \frac{-18}{-6} \\ x &= 3 \end{aligned}$$

b)  $-7(x + 2) = 5x - 26$

$$\begin{aligned} -7x - 14 &= 5x - 26 \\ -12x &= -12 \\ \frac{-12x}{-12} &= \frac{-12}{-12} \\ x &= 1 \end{aligned}$$