

Solving Equations Using Distributive Property Homework

Name Key CV
 Date _____ Period _____

Complete each table by solving the equation.

1. $y = 3(x+1)$ $y = 3x + 3$

x	y
-1	0
$-\frac{1}{3}$	2
2	9
$\frac{1}{3}$	4
6	21

$2 = 3x + 3$
 $-1 = 3x$
 $-\frac{1}{3} = x$
 $4 = 3x + 3$
 $1 = 3x$
 $\frac{1}{3} = x$

2. $y = -\frac{1}{2}(x-4)$ $y = -0.5x + 2$

x	y
-2	3
10	-3
14	-5
2	1
0	2

$-3 = -0.5x + 2$

Solve each equation. Then verify your solution.

3. $8 - 5(x+3) = -2$

$8 - 5x - 15 = -2$
 $-7 - 5x = -2$
 $+7$
 $-5x = 5$
 $-\frac{5x}{-5} = \frac{5}{-5}$
 $x = -1$

4. $-\frac{1}{4}(8x-16) = 15$

$-2x + 4 = 15$
 -4
 $-2x = 11$
 $\frac{-2x}{-2} = \frac{11}{-2}$
 $x = -\frac{11}{2}$
 $x = -5.5$

5. $4(x-1) + 3 = -5$

$4x - 4 + 3 = -5$
 $4x - 1 = -5$
 $+1$
 $4x = -4$
 $\frac{4x}{4} = \frac{-4}{4}$
 $x = -1$

6. $2x + 3(x+2) = 8$

$2x + 3x + 6 = 8$
 $5x + 6 = 8$
 -6
 $5x = 2$
 $\frac{5x}{5} = \frac{2}{5}$
 $x = \frac{2}{5}$ or $x = 0.4$

Translate and solve the following.

7. Five times the sum of a number and nine is thirty-five.

$5(x+9) = 35$
 $5x + 45 = 35$
 -45
 $5x = -10$
 $\frac{5x}{5} = \frac{-10}{5}$
 $x = -2$

8. Nine minus three times the difference of a number and four is thirty-six.

$9 - 3(x-4) = 36$
 $9 - 3x + 12 = 36$
 $-3x + 21 = 36$
 -21
 $-3x = 15$
 $\frac{-3x}{-3} = \frac{15}{-3}$
 $x = -5$

9. The sum of three times a number and six is twenty-seven.

$3x + 6 = 27$
 -6
 $3x = 21$
 $\frac{3x}{3} = \frac{21}{3}$
 $x = 7$

10. Fifteen is half of the difference of twice a number and ten.

$15 = \frac{1}{2}(2n-10)$
 $15 = n - 5$
 $+5$
 $20 = n$
 $n = 20$

$$2. \quad \begin{array}{r} -3 = -0.5x + 2 \\ -2 \quad \quad \quad -2 \end{array}$$

$$\begin{array}{r} -5 = -0.5x \\ -0.5 \quad -0.5 \end{array}$$

$$10 = x$$

$$\begin{array}{r} 1 = -0.5x + 2 \\ -2 \quad \quad \quad -2 \end{array}$$

$$\begin{array}{r} -1 = -0.5x \\ -0.5 \quad -0.5 \end{array}$$

$$0 = x$$

$$\begin{array}{r} -5 = -0.5x + 2 \\ -2 \quad \quad \quad -2 \end{array}$$

$$\begin{array}{r} -7 = -0.5x \\ -0.5 \quad -0.5 \end{array}$$

$$14 = x$$

$$\begin{array}{r} 2 = -0.5x + 2 \\ -2 \quad \quad \quad -2 \end{array}$$

$$\begin{array}{r} 0 = -0.5x \\ -0.5 \quad -0.5 \end{array}$$

$$0 = x$$