

Get out your homework and have it ready to check. Start checking your answers with the key below. Target Check on Monday!

Classwork - Two Step Equations w/ Simplifying

Solve each equation using inverse operations. Check your solution and SHOW WORK.

$$1. 3g + 5 = 17$$

$$\begin{array}{r} -5 \quad -5 \\ \hline \end{array}$$

$$\frac{3g}{3} = \frac{12}{3}$$

$$g = 4$$

$$2. 9 = 4a + 13$$

$$\begin{array}{r} -13 \quad -13 \\ \hline \end{array}$$

$$\frac{-4}{4} = \frac{4a}{4}$$

$$-1 = a$$

$$3. 13 = 5m - 2$$

$$\begin{array}{r} +2 \quad +2 \\ \hline \end{array}$$

$$\frac{15}{5} = \frac{5m}{5}$$

$$3 = m$$

$$4. -15 = 2t - 11$$

$$\begin{array}{r} +11 \quad +11 \\ \hline \end{array}$$

$$\frac{-4}{2} = \frac{2t}{2}$$

$$-2 = t$$

$$5. 7k - 5 = -19$$

$$\begin{array}{r} +5 \quad +5 \\ \hline \end{array}$$

$$\frac{7k}{7} = \frac{-14}{7}$$

$$k = -2$$

$$6. 13 = 4x - 11$$

$$\begin{array}{r} +11 \quad +11 \\ \hline \end{array}$$

$$\frac{24}{4} = \frac{4x}{4}$$

$$6 = x$$

$$7. \begin{array}{r} 10 = \frac{z}{2} + 7 \\ -7 \quad -7 \\ \hline \end{array}$$

$$2 \cdot 3 = \frac{z}{2} \cdot 2$$

$$6 = z$$

$$8. \begin{array}{r} \frac{n}{5} + 6 = -4 \\ -6 \quad -6 \\ \hline \end{array}$$

$$5 \cdot \frac{n}{5} = -10 \cdot 5$$

$$n = -50$$

$$9. \begin{array}{r} 4 - 3y = 31 \\ -4 \quad -4 \\ \hline \end{array}$$

$$\begin{array}{r} -3y = 27 \\ \frac{-3y}{-3} = \frac{27}{-3} \end{array}$$

$$y = -9$$

$$10. \begin{array}{r} 15 - 2b = -9 \\ -15 \quad -15 \\ \hline \end{array}$$

$$\begin{array}{r} -2b = -24 \\ \frac{-2b}{-2} = \frac{-24}{-2} \end{array}$$

$$b = 12$$

$$11. \begin{array}{r} -\frac{1}{3}y - 6 = -11 \\ +6 \quad +6 \\ \hline \end{array}$$

$$3 \cdot \frac{-1y}{3} = -5 \cdot 3$$

$$\begin{array}{r} -1y = -15 \\ \frac{-1y}{-1} = \frac{-15}{-1} \end{array}$$

$$y = 15$$

$$12. \begin{array}{r} 16 - \frac{r}{7} = 21 \\ -16 \quad -16 \\ \hline \end{array}$$

$$-7 \cdot -\frac{r}{7} = 5 \cdot -7$$

$$r = -35$$

$$13. 6a + 6 = -18$$

$$\begin{array}{r} -6 \quad -6 \\ \hline 6a = -24 \\ \hline 6 \quad 6 \\ \hline a = -4 \end{array}$$

$$14. 3w + 5 = 20$$

$$\begin{array}{r} -5 \quad -5 \\ \hline 3w = 15 \\ \hline 3 \quad 3 \\ \hline w = 5 \end{array}$$

$$15. 4 \cdot \frac{k-3}{4} = 10 \cdot 4$$

$$\begin{array}{r} k-3 = 40 \\ +3 \quad +3 \\ \hline k = 43 \end{array}$$

OR

$$\begin{array}{r} \frac{k}{4} - \frac{3}{4} = 10 \\ +\frac{3}{4} \quad +\frac{3}{4} \end{array}$$

$$4 \cdot \frac{k}{4} = 10 \cdot \frac{3}{4} + 4 \quad k = 43$$

16. GAMES A card game has 50 cards. After dealing 7 cards to each player, Tupi has 15 cards left over. Solve the equation $50 - 7p = 15$ to find the number of players.

$$\begin{array}{r} 50 - 7p = 15 \\ -50 \quad -50 \\ \hline -7p = -35 \\ \hline -7 \quad -7 \end{array}$$

$$p = 5 \text{ players}$$

17. SHOPPING Mrs. Williams shops at a store that has an annual membership fee of \$30. Today she paid her annual membership and bought several fruit baskets costing \$15 each as gifts for her coworkers. Her total was \$105. Write and solve an equation to find the number of fruit baskets Mrs. Williams purchased.

Equation: $15g + 30 = 105$

$g = \#$ of gifts

$$\begin{array}{r} 15g + 30 = 105 \\ -30 \quad -30 \\ \hline 15g = 75 \\ \hline 15 \quad 15 \end{array}$$

$$g = 5 \quad 5 \text{ fruit baskets}$$

- A) Identify the terms you are working with (The + or - signs in front of term are part of the term)
- B) Multiply the term outside the parenthesis with the first term inside the parenthesis.
- C) Multiply the term outside the parenthesis with the next term inside the parenthesis.
-Do this until you have distributed the multiplication with every term inside the parenthesis.
- D) Write the expanded form of the expression
- E) Make sure to distribute before combining like terms or solving the equation

1) Simplify each of the factored expressions below by using the distributive property.

A) $5(2x + 8)$
 $10x + 40$

B) $-4(3x - 2)$
 $-12x + 8$

C) $2(-6x - 5)$
 $-12x - 10$

D) $\frac{4}{5}(10x + 20)$
 $8x + 16$

E) $\frac{2}{3}(6x - 9)$
 $4x - 6$

F) $-5(2x - 4) + 6$
 $-10x + 20 + 6$
 $-10x + 26$

G) $5x - 4(2x - 3)$

$$5x - 8x + 12$$

$$-3x + 12$$

H) $-2(3x + 6) + 4(5x - 2)$

$$-6x - 12 + 20x - 8$$

$$14x - 20$$

I) $3x(2x - 2) + 4x + 5x^2$

$$3x \begin{array}{|l} 6x^2 \\ -6x \end{array} \begin{array}{|l} \\ -2 \end{array}$$

$$\begin{array}{|l} 6x^2 \\ -6x + 4x \\ +5x^2 \end{array}$$

$$11x^2 - 2x$$

2) When you expressions in an equation where you need to use the distributive property, make sure you distribute the multiplication **BEFORE** combining like terms or solving the equation. After you distribute, see if you can combine like terms before you solve.

A) $2(x+1) = 26$

$$2 \begin{array}{|l} \hline 2x + 2 \\ \hline x + 1 \end{array}$$

$$2x + 2 = 26$$

$$\begin{array}{r} -2 \quad -2 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{24}{2}$$

$$x = 12$$

B) $-3(x+4) = 15$

$$-3x - 12 = 15$$

$$+12 \quad +12$$

$$\hline -3x = 27$$

$$\frac{-3x}{-3} = \frac{27}{-3}$$

$$x = -9$$

C) $4(2x+1) = 44$

$$8x + 4 = 44$$

$$-4 \quad -4$$

$$\hline$$

$$8x = 40$$

$$\frac{8x}{8} = \frac{40}{8}$$

$$x = 5$$

$$D) -3(-2x + 1) = 21$$

$$\begin{array}{r} 6x - 3 = 21 \\ + 3 \quad + 3 \\ \hline 6x = 24 \\ \hline \frac{6x}{6} = \frac{24}{6} \\ x = 4 \end{array}$$

$$D) \frac{1}{3}(6x + 9) = 27$$

$$\begin{array}{r} 2x + 3 = 27 \\ - 3 \quad - 3 \\ \hline 2x = 24 \\ \hline \frac{2x}{2} = \frac{24}{2} \\ x = 12 \end{array}$$

$$E) \frac{3}{4}(-12x + 8) = 32$$

$$\begin{array}{r} -9x + 6 = 32 \\ - 6 \quad - 6 \\ \hline -9x = 26 \\ \hline \frac{-9x}{-9} = \frac{26}{-9} \\ x = -2.8 \overline{8} \end{array}$$

$$-12 \cdot \text{ANS} + 8 = 42.6$$

$$42.6 - 8 = -12 \cdot \text{ANS}$$
$$-12 \cdot \text{ANS} = -34.6$$
$$\text{ANS} = \frac{-34.6}{-12} = 2.88\overline{3}$$

$$\text{G) } -3(x+4) + 1 = 19$$

$$-3x - 12 + 1 = 19$$

$$-3x - 11 = 19$$

$$\begin{array}{r} +11 \quad +11 \\ \hline -3x = 30 \\ \hline \end{array}$$

$$\frac{-3x}{-3} = \frac{30}{-3}$$

$$x = -10$$

$$\text{H) } 4(-2x+5) + 4x = -12$$

$$-8x + 20 + 4x = -12$$

$$-4x + 20 = -12$$

$$\begin{array}{r} -20 \quad -20 \\ \hline \end{array}$$

$$\begin{array}{r} -4x = -32 \\ \hline \end{array}$$

$$\frac{-4x}{-4} = \frac{-32}{-4}$$
$$x = 8$$