

Objective: TSWBAT Solve Multistep equations

$$\textcircled{1} \quad 4x + 7 = 3x + 18$$

$$\begin{array}{r} \underline{-3x} \quad \underline{-3x} \\ \phantom{x} + 7 = 18 \\ \phantom{x} + 7 = 18 \end{array}$$

$$x + 7 = 18$$

$$\underline{-7} \quad \underline{-7}$$

$$\textcircled{x = 11}$$

$$4x + 7 = 3x + 18$$

$$\underline{-4x} \quad \underline{-4x}$$

$$7 = -x + 18$$

$$\underline{-18} \quad \underline{-18}$$

$$\underline{-11} = \underline{-x}$$

$$\textcircled{11 = x}$$

$$\textcircled{7} \quad 13 - 8v = 5v + 2$$

$$\begin{array}{r} \underline{+8v} \quad \underline{+8v} \\ 0 \\ 13 = 13v + 2 \\ \underline{-2} \quad \quad \underline{-2} \end{array}$$

$$\frac{11}{13} = \frac{13v}{13}$$

$$\frac{11}{13} = v$$

$$\textcircled{15} \quad 2(x+1) = 3x - 3$$

$$2x + 2 = 3x - 3$$

$$\begin{array}{r} -2x \\ \hline 0 \end{array} \qquad \begin{array}{r} -2x \\ \hline 0 \end{array}$$

$$2 = x - 3$$

$$\begin{array}{r} +3 \\ \hline 5 \end{array} \qquad \begin{array}{r} +3 \\ \hline 0 \end{array}$$

$$\textcircled{5 = x}$$

$$\textcircled{19} \quad 2z - 5(z+2) = -8 - 2z$$

$$2z - 5z - 10 = -8 - 2z$$

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$$-3z - 10 = -8 - 2z$$

$$\frac{+3z}{0}$$

$$\frac{+3z}{0}$$

$$-10 = -8 + 2$$

$$\frac{+8}{0} \quad \frac{+8}{0}$$

$$\textcircled{-2 = 2}$$

$$\textcircled{29} \quad 8 + 5(3q - 4) = 7(q - 12)$$

$$8 + 15q - 20 = 7q - 84$$

$$-12 + 15q = 7q - 84$$

$$\begin{array}{r} -7q \\ \hline \end{array} \quad \begin{array}{r} -7q \\ \hline 0 \end{array}$$

$$-12 + 8q = -84$$

$$\begin{array}{r} +12 \\ \hline \end{array} \quad \begin{array}{r} +12 \\ \hline \end{array}$$

$$\begin{array}{r} 8q = -72 \\ \hline 8 \end{array}$$

$$\textcircled{q = -9}$$

$$4b - 1 = -4 + 4b + 3$$

$$4b - 1 = -1 + 4b$$

$$\underline{-4b} \qquad \underline{-4b}$$

$$\textcircled{-1 = -1}$$



True Statement  $-1 = -1$

Called "Identity"  
infinitely many  
Solutions

$$6y + 9 = 3(2y + 3)$$

$$6y + 9 = 6y + 9$$

$$\underline{-6y} \quad \underline{-6y}$$

$$\textcircled{9 = 9}$$

identity

infinitely many solutions

$$3(n - 1) = 5n + 3 - 2n$$

$$3n - 3 = 3n + 3$$

$$\underline{-3n}$$

$$\underline{-3n}$$

$$\textcircled{-3 = 3}$$

Not True therefore.

No Solutions

$$\textcircled{41} \quad 2 \left( \frac{1}{3}w + \frac{1}{4} \right) = 4 + \frac{1}{3}w$$

$$\begin{array}{cccc} (12) & (12) & (12) & (12) \\ \frac{2}{3}w & + & \frac{2}{4} & = & 4 & + & \frac{1}{3}w \end{array}$$

$$\begin{array}{r} 8w + 6 = 48 + 4w \\ \underline{-4w} \qquad \qquad \qquad \underline{-4w} \end{array}$$

$$4w + 6 = 48$$

$$\begin{array}{r} \underline{-6} \quad \underline{-6} \end{array}$$

$$\frac{4w}{4} = \frac{42}{4}$$

$$\textcircled{w=6}$$

19. Hans needs to rent a moving truck. Suppose Company A charges a rate of \$40 per day and Company B charges a \$60 fee plus \$20 per day. For what number of days is the cost the same?

$$40d = 60 + 20d$$

$$\begin{array}{r} -20d \\ \hline \end{array} \qquad \begin{array}{r} -20d \\ \hline 0 \end{array}$$

$$\begin{array}{r} 20d = 60 \\ \hline 20 \quad 20 \end{array}$$

$$d = 3$$

A company produces ink cartridges for ballpoint pens. The setup cost for a run of red cartridges is \$700 plus \$.08 per cartridge for materials. The company can sell the cartridges for \$.24 each. How many cartridges must be produced and sold to break even?

$$700 + 0.08c = .24c$$

$$\begin{array}{r} -0.08c \quad -0.08c \\ \hline 0 \end{array}$$

$$\begin{array}{r} 700 = .16c \\ \hline .16 \quad .16 \end{array}$$

$$4,375 = c$$