

12-13-17

Aim: SWBAT solve and check "CLT" equations and "Variables On Both Sides" equations.

Do Now:

HW: Pg. 296 # 25 - 28 (solve and check)

Pg. 301 # 21 - 24 (solve and check)

Test Tuesday ???

Pg. 295 # 3-9 ; Pg. 300 # 8-12 (Solve and Check)

C.L.T.

$$\textcircled{3} \quad \boxed{8b + 2b} = 10$$

$$\frac{10b}{10} = \frac{10}{10}$$

$$b = 1$$

ck/

$$8b + 2b = 10$$

$$8 \cdot 1 + 2 \cdot 1 = 10$$

$$8 + 2 = 10$$

$$10 = 10$$

C.L.T.

$$\textcircled{4} \quad \boxed{-n + 8n} = 35$$

$$\frac{7n}{7} = \frac{35}{7}$$

$$n = 5$$

ck/

$$-n + 8n = 35$$

$$-5 + 8 \cdot 5 = 35$$

$$-5 + 40 = 35$$

$$35 = 35$$

C.L.T.

$$\textcircled{5} \quad \boxed{7y - 3y - 8} = -32$$

$$\frac{4y - 8}{+8} = \frac{-32}{+8}$$

$$\frac{4y}{4} = \frac{-24}{4}$$

$$y = -6$$

ck/

$$7y - 3y - 8 = -32$$

$$7(-6) - 3(-6) - 8 = -32$$

$$-42 + 18 - 8 = -32$$

$$-32 = -32$$

C.L.T.

$$\textcircled{6} \quad \boxed{4x - 7 - 7x} = -1$$

$$\frac{-3x - 7}{+7} = \frac{-1}{+7}$$

$$\frac{-3x}{-3} = \frac{6}{-3}$$

$$x = -2$$

ck/

$$4x - 7 - 7x = -1$$

$$4(-2) - 7 - 7(-2) = -1$$

$$-8 - 7 + 14 = -1$$

$$-1 = -1$$

C.L.T.

$$\textcircled{7} \quad \boxed{-2z + 6z - 9} = 15$$

$$\frac{4z - 9}{+9} = \frac{15}{+9}$$

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

$$z = 6$$

ck/

$$-2z + 6z - 9 = 15$$

$$-2 \cdot 6 + 6 \cdot 6 - 9 = 15$$

$$-12 + 36 - 9 = 15$$

$$15 = 15$$

C.L.T.

$$\textcircled{8} \quad \boxed{-22 + 3k + 6} = -28$$

$$\frac{3k - 16}{+16} = \frac{-28}{+16}$$

$$\frac{3k}{3} = \frac{-12}{3}$$

$$k = -4$$

ck/

$$-22 + 3k + 6 = -28$$

$$-22 + 3(-4) + 6 = -28$$

$$-22 + (-12) + 6 = -28$$

$$-28 = -28$$

D.P.

$$\textcircled{9} \quad 5(w - 7) = -15$$

$$\frac{5w - 35}{+35} = \frac{-15}{+35}$$

$$\frac{5w}{5} = \frac{20}{5}$$

$$w = 4$$

ck/

$$5(w - 7) = -15$$

$$5(4 - 7) = -15$$

$$5(-3) = -15$$

$$-15 = -15$$

$$\frac{5(w - 7) = -15}{5} \quad \frac{-15}{5}$$

$$\frac{w - 7 = -3}{+7} \quad \frac{-3}{+7}$$

$$w = 4$$

Pg. 300

Variables on Both Sides

$$\begin{array}{r} \textcircled{8} \quad 5z - 43 = 2z + 80 \\ -2z \quad \quad -2z \\ \hline 3z - 43 = 80 \\ +43 \quad +43 \\ \hline 3z = 123 \\ \underline{\quad} \\ z = 41 \end{array}$$

ck/ $5z - 43 = 2z + 80$
 $5(41) - 43 \stackrel{?}{=} 2(41) + 80$
 $205 - 43 = 82 + 80$
 $162 = 162$

Variables on Both Sides

$$\begin{array}{r} \textcircled{9} \quad 16y - 43 = 4y + 65 \\ -4y \quad \quad -4y \\ \hline 12y - 43 = 65 \\ +43 \quad +43 \\ \hline 12y = 108 \\ \underline{\quad} \\ y = 9 \end{array}$$

ck/ $16y - 43 = 4y + 65$
 $16 \cdot 9 - 43 \stackrel{?}{=} 4 \cdot 9 + 65$
 $144 - 43 \stackrel{?}{=} 36 + 65$
 $101 = 101$

Variables on Both Sides

$$\begin{array}{r} \textcircled{10} \quad 8f + 11 = -7f - 19 \\ +7f \quad \quad +7f \\ \hline 15f + 11 = -19 \\ -11 \quad -11 \\ \hline 15f = -30 \\ \underline{\quad} \\ f = -2 \end{array}$$

ck/ $8f + 11 = -7f - 19$
 $8(-2) + 11 \stackrel{?}{=} -7(-2) - 19$
 $-16 + 11 \stackrel{?}{=} 14 - 19$
 $-5 = -5$

Variables on Both Sides

$$\begin{array}{r} \textcircled{12} \quad 9b - 10 = -b - 18 \\ +b \quad \quad +b \\ \hline 10b - 10 = -18 \\ +10 \quad +10 \\ \hline 10b = -8 \\ \underline{\quad} \\ b = \frac{-4}{5} \end{array}$$

ck/ $9b - 10 = -b - 18$
 $9\left(\frac{-4}{5}\right) - 10 \stackrel{?}{=} -\left(\frac{-4}{5}\right) - 18$
 $-\frac{36}{5} - 10 \stackrel{?}{=} \frac{4}{5} - 18$
 $-\frac{36}{5} - \frac{50}{5} \stackrel{?}{=} \frac{4}{5} - \frac{90}{5}$
 $-\frac{86}{5} = -\frac{86}{5}$

Variables on Both Sides

$$\begin{array}{r} \textcircled{11} \quad -1 + 11a = 6 - 3a \\ +3a \quad \quad +3a \\ \hline -1 + 14a = 6 \\ +1 \quad +1 \\ \hline 14a = 7 \\ \underline{\quad} \\ a = \frac{1}{2} \end{array}$$

ck/ $-1 + 11a = 6 - 3a$
 $-1 + 11 \cdot \frac{1}{2} \stackrel{?}{=} 6 - 3 \cdot \frac{1}{2}$
 $-1 + \frac{11}{2} \stackrel{?}{=} 6 - \frac{3}{2}$
 $-\frac{2}{2} + \frac{11}{2} \stackrel{?}{=} \frac{12}{2} - \frac{3}{2}$
 $\frac{9}{2} = \frac{9}{2}$

Solve and check.

C.L.T.

$$\begin{array}{r|l}
 m + 3(m + 4) = 16 & \\
 \boxed{m + 3m} + \textcircled{+12} = 16 & \\
 4m + 12 = 16 & \\
 \underline{-12} & \underline{-12} \\
 \hline
 4m & = 4 \\
 \underline{4} & \underline{4} \\
 m & = 1
 \end{array}$$

ck/

$$\begin{array}{r}
 m + 3(m + 4) = 16 \\
 1 + 3(1 + 4) \stackrel{?}{=} 16 \\
 \quad \quad \quad \checkmark \quad \quad \quad \checkmark \\
 1 + 3 \cdot 5 \stackrel{?}{=} 16 \\
 \quad \quad \quad \checkmark \quad \quad \quad \checkmark \\
 1 + 15 \stackrel{?}{=} 16 \\
 \quad \quad \quad \checkmark \quad \quad \quad \checkmark \\
 16 = 16
 \end{array}$$

Variables on Both Sides

$$\begin{array}{r|l}
 3(m + 4) = m & \\
 3m + 12 = m & \\
 \underline{-3m} & \underline{-3m} \\
 \hline
 12 & = -2m \\
 \underline{-2} & \underline{-2} \\
 -6 & = m \\
 3(m + 4) = m & \\
 3(-6 + 4) \stackrel{?}{=} -6 & \\
 \quad \quad \quad \checkmark \quad \quad \quad \checkmark \\
 3(-2) \stackrel{?}{=} -6 & \\
 \quad \quad \quad \checkmark \quad \quad \quad \checkmark \\
 -6 = -6 &
 \end{array}$$

C.L.T.

$$\begin{aligned}
 -4 &= -1 - 3(2p + 3) \\
 -4 &= \textcircled{-1} - \boxed{6p} - \textcircled{9} \\
 -4 &= -6p - 10 \\
 +10 & \quad \quad \quad +10 \\
 \hline
 6 &= \cancel{-6p} \\
 -6 & \quad \quad \quad -6 \\
 \hline
 -1 &= p
 \end{aligned}$$

$$\begin{aligned}
 -4 &= -1 - 3(2p + 3) \\
 -4 &\stackrel{?}{=} -1 - 3(2(-1) + 3) \\
 -4 &\stackrel{?}{=} -1 - 3(-2 + 3) \\
 -4 &\stackrel{?}{=} -1 - 3(1) \\
 -4 &\stackrel{?}{=} -1 - 3 \\
 -4 &= -4
 \end{aligned}$$

Variables on Both Sides

$$\begin{aligned}
 -4 - p &= -3(2p + 3) \\
 -4 - p &= \cancel{-6p} - 9 \\
 +6p & \quad \quad \quad +6p \\
 \hline
 -4 + 5p &= -9 \\
 +4 & \quad \quad \quad +4 \\
 \hline
 5p &= -5 \\
 \cancel{5}p & \quad \quad \quad \cancel{5}p \\
 p &= -1
 \end{aligned}$$

$$\begin{aligned}
 -4 - p &= -3(2p + 3) \\
 -4 \textcircled{-1} &\stackrel{?}{=} -3(2(-1) + 3) \\
 -4 + 1 &\stackrel{?}{=} -3(-2 + 3) \\
 -3 &\stackrel{?}{=} -3(1) \\
 -3 &= -3
 \end{aligned}$$

$$2(z + 3) - 4(z + 1) = 10$$

$$\boxed{2z} + \boxed{6} - \boxed{4z} - \boxed{4} = 10$$

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

$$\begin{array}{r} -2z = 8 \\ \hline -2z = 8 \\ \quad \quad \quad -2 \\ \hline z = -4 \end{array}$$

$$2(z + 3) - 4(z + 1) = 2(z + 5)$$

$$\boxed{2z} + \boxed{6} - \boxed{4z} - \boxed{4} = 2z + 10$$

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

$$\begin{array}{r} 2 = 4z + 10 \\ -10 \\ \hline -8 = 4z \\ \quad \quad \quad 4 \\ \hline -2 = z \end{array}$$

$$2(z + 3) - 4(z + 1) = 10$$

$$2(-4 + 3) - 4(-4 + 1) \stackrel{?}{=} 10$$

$$2(-1) - 4(-3) \stackrel{?}{=} 10$$

$$-2 \overset{+}{(-12)} \stackrel{?}{=} 10$$

$$10 = 10$$

$$2(z + 3) - 4(z + 1) = 2(z + 5)$$

$$2(-2 + 3) - 4(-2 + 1) \stackrel{?}{=} 2(-2 + 5)$$

$$2(1) - 4(-1) \stackrel{?}{=} 2(3)$$

$$2 \overset{+}{(-4)} \stackrel{?}{=} 6$$

$$6 = 6$$