

HW: 2.8/1-5, 8-15, 17

**Warm up:**

Solve for x.

$$\begin{array}{r} n + vx = p \\ -h \qquad -h \\ \hline vx = p - h \\ \downarrow \qquad \downarrow \\ \boxed{x = \frac{p-h}{v} ; v \neq 0} \end{array}$$

Sub Work Solutions

(23)

$$\frac{1}{2}x + 5 = \frac{1}{2}x$$
$$-\frac{1}{2}x \quad -\frac{1}{2}x$$

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$$2(5) = \left(\frac{1}{2}x\right) 2$$

$$10 = x$$

②

$$8(5-n) = 2n$$

$$40 - 8n = 2n$$

$$+8n \quad +8n$$

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$$40 = 10n$$

$$\frac{40}{10} = \frac{10n}{10}$$

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$$4 = n$$

$$(2) \rightarrow \left( \frac{9-27}{7} \right) = (4) \rightarrow$$

$$\begin{array}{r} 9-27=77 \\ +27 \quad +27 \\ \hline 9=97 \\ \hline 9 \quad 9 \\ \hline 1=4 \end{array}$$

$$\begin{array}{r} \textcircled{7} \quad 30 = 8 - 2x \\ \quad \underline{-8 \quad -8} \\ \hline \quad 22 = -2x \\ \quad \underline{-2 \quad -2} \\ \hline \quad -11 = x \end{array}$$

$$\textcircled{3} \quad \frac{1}{3}(12 - 6x) = 4 - 2x$$

$$\begin{array}{r} 4 - 2x = 4 - 2x \\ + 2x \qquad \quad + 2x \\ \hline 4 = 4 \end{array}$$

infinitely many solutions

$$\textcircled{35} \quad 5u + 5(1-u) = 4 + 8$$

$$\underline{5u} + 5 - \underline{5u} = 4 + 8$$

$$\begin{array}{r} 5 = 4 + 8 \\ -8 \quad -8 \end{array}$$

$$\underline{\underline{-3 = 4}}$$

$$\textcircled{25} \quad 5 \left( \frac{4+y}{5} \right) = (y) 5$$

$$\begin{array}{r} 4+y = 5y \\ -y \quad -y \\ \hline 4 = 4y \\ -4 \quad -4 \\ \hline 0 = 0y \\ \hline 1 = y \end{array}$$



$$\textcircled{37} \quad 3(m+5) - 6 = 3(m+3)$$

$$3m + \underline{15} - \underline{6} = 3m + 9$$

$$\begin{array}{r} 3m + 9 = 3m + 9 \\ -3m \quad -3m \\ \hline \end{array}$$

$$9 = 9$$

infinitely many solutions

$$\begin{array}{r} \textcircled{a} \quad 51a - 56 = 44a \\ -51a \qquad -51a \\ \hline -56 = -7a \\ \frac{-56}{-7} = \frac{-7a}{-7} \\ \hline 8 = a \end{array}$$

$$\begin{aligned} \textcircled{39} \quad & 3(5y+2) - y = 2(y-3) \\ & \underline{15y + 6} - y = 2y - 6 \\ & 14y + 6 = 2y - 6 \\ & \underline{-2y} \quad \quad \underline{-2y} \\ & 12y + 6 = -6 \\ & \underline{-6} \quad \quad \underline{-6} \\ & \frac{12y}{12} = \frac{-12}{12} \quad \quad \textcircled{y = -1} \end{aligned}$$

$$\begin{array}{r} \textcircled{3} \quad 12n = 34 - 5n \\ + 5n \qquad \quad + 5n \\ \hline 17n = 34 \\ \hline \frac{17n}{17} = \frac{34}{17} \\ \hline n = 2 \end{array}$$

$$\textcircled{4} \quad 6r - 2(2-r) = 4(2r-1)$$

$$\underline{6r} - 4 + \underline{2r} = 8r - 4$$

$$8r - 4 = 8r - 4$$

$$\begin{array}{r} -8r \\ \hline \end{array} \quad \begin{array}{r} -8r \\ \hline \end{array}$$

$$-4 = -4$$

infinitely many solutions

$$\begin{aligned} \textcircled{43} \quad & 3 + 4(p+2) = 2p + 3(p+4) \\ & \underline{3 + 4p + 8 = 2p + 3p + 12} \\ & 4p + 11 = 5p + 12 \\ & \underline{-4p \qquad -4p} \\ & 11 = p + 12 \\ & \underline{-12 \qquad -12} \\ & \textcircled{-1 = p} \end{aligned}$$

⑪

$$98 - 4b = -11b$$

$$+4b \quad +4b$$

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$$98 = -7b$$

$$\frac{-7}{-7} \quad \frac{-7}{-7}$$

$$\underline{-14 = 6}$$

## Quiz Solutions

$$\textcircled{15} \quad |3x+5|=11$$

$$\begin{array}{r} 3x+5=11 \\ -5 \quad -5 \\ \hline 3x=6 \\ \frac{3}{3} \quad \frac{6}{3} \end{array}$$

$$\begin{array}{r} 3x+5=-11 \\ -5 \quad -5 \\ \hline 3x=-16 \\ \frac{3}{3} \quad \frac{-16}{3} \end{array}$$

$$x=2 \quad \text{or} \quad x=-\frac{16}{3}$$



$$\textcircled{11} \quad 9|x| + 3 = 30$$

$$\begin{array}{r} -3 \quad -3 \\ \hline 9|x| = 27 \\ \hline \frac{9|x|}{9} = \frac{27}{9} \end{array}$$

$$|x| = 3$$

$$x = 3, -3$$

$$Q \frac{5}{9} \left( -\frac{a}{5} \right) = \left( \cancel{18} \right) \left( -\frac{5}{\cancel{9}} \right)$$

$$r = -10$$

$$\textcircled{1} \quad 4b - 2 + b = 73$$

$$5b - 2 = 73$$

$$+2 \quad +2$$

$$\hline 5b = 75$$

$$\frac{5b}{5} = \frac{75}{5}$$

$$\hline b = 15$$

Brian → \$15  
Jack → \$58

(13)

$$(x-5) + (2x-8) - (4x+9) = -11$$

$$\underline{x-5} + \underline{2x-8} - \underline{4x-9} = -11$$

$$\begin{array}{r} -x - 22 = -11 \\ + 22 \quad + 22 \\ \hline \end{array}$$

$$\begin{array}{r} -x = 11 \\ \hline -1 \quad -1 \end{array}$$

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

$$\textcircled{5} \quad \underline{10p - p + 2 = -7}$$

$$9p + 2 = -7$$

$$\underline{-2 \quad -2}$$

$$9p = -9$$

$$\underline{\quad \quad 9 \quad \quad 9}$$

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

$$\textcircled{10} \quad \begin{array}{r} 10 + |m-2| = 1 \\ -10 \qquad \qquad -10 \\ \hline \end{array}$$

$$|m-2| = -9$$

no solution

$$\textcircled{4} \quad \frac{5|m|}{5} = \frac{35}{5}$$

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$$|m| = 7$$

$m = 7, -7$

$$\textcircled{9} \quad 4 = -4 - \frac{x}{3}$$

+4    +4

$$-3 \quad \underline{8} = \left(-\frac{x}{3}\right) (-3)$$

$$\underline{-24 = x}$$

$$3(4) = (-4 - \frac{x}{3})^3$$

$$12 = -12 - x$$

$$\begin{array}{r} +12 \quad +12 \\ \hline 24 = -x \\ \hline -1 \quad -1 \end{array}$$

$$\underline{-24 = x}$$



⑩

$$x + x + 1 + x + 2 = 84$$

$$3x + 3 = 84$$

$$\frac{3x + 3}{3} = \frac{84}{3}$$

$$x + 1 = 28$$

$$x = 27$$

27, 28, 29

Solve for z.

$$(z+a) \left( \frac{2x+y}{z+a} \right) = (7b)(z+a)$$

$$2x+y = 7bz + 7ab$$

$$-7ab \quad \quad \quad -7ab$$

$$\frac{2x+y-7ab}{7b} = \frac{7bz}{7b} \quad \frac{7b \neq 0}{7} \quad \frac{7}{7}$$

$$b \neq 0$$

$$\frac{2x+y-7ab}{7b} = z ; b \neq 0$$

Solve for x.

$$3x + 8y = cx + am$$

$$\begin{array}{r} 3x + 8y = cx + am \\ -cx \quad -cx \\ \hline \end{array}$$

$$3x + 8y - cx = am$$

$$\begin{array}{r} 3x + 8y - cx = am \\ -8y \quad -8y \\ \hline \end{array}$$

$$3x - cx = am - 8y$$

$$x(3 - c) = am - 8y$$

$$\begin{array}{r} x(3 - c) = am - 8y \\ \hline 3 - c \quad 3 - c \\ \hline \end{array}$$

$$x = \frac{am - 8y}{3 - c} ; c \neq 3$$

$$\begin{array}{r} 3 - c \neq 0 \\ -3 \quad -3 \\ \hline -c \neq -3 \\ -1 \quad -1 \\ \hline c \neq 3 \end{array}$$

1) Solve for y.

$$3x - 4y = 7$$

2) Solve for a.

$$\frac{c + 4a}{m} = g$$

3) Solve for n.

$$2n - t = sn + 5$$

4) Solve for x.

$$ax - y = az + w$$

5) Solve for h.

$$6ah - 3n = 5y$$

1) Solve for y.

$$\begin{array}{r} 3x - 4y = 7 \\ -3x \quad -3x \\ \hline -4y = 7 - 3x \\ \hline -4 \quad -4 \\ \hline y = \frac{7 - 3x}{-4} = \frac{-7 + 3x}{4} = y \end{array}$$

2) Solve for a.

$$\frac{c+4a}{m} = g$$

3) Solve for  $n$ .

$$2n - t = sn + 5$$

4) Solve for x.

$$ax - y = az + w$$



5) Solve for h.

$$6ah - 3n = 5y$$

