

Name: _____ Algebra 9 Unit 2 Lesson 3

Solving Equations by Combining Like Terms

DO NOW ~ Wednesday 10/30

Solve the following equation. Show all of your work.

$$\begin{array}{r}
 -4(5x-1) = -76 \\
 -20x + 4 = -76 \\
 \hline
 -20x = -80 \\
 \hline
 x = 4
 \end{array}$$



Classwork

Checklist for solving equations.

- 1) Are there parenthesis? If so, Distribute.
- 2) Combine like terms on the same side.
- 3) Save the # attached to the variable (letter) for LAST.
- 4) Use opposite operations to solve the one or two-step equation.

$$\begin{array}{r}
 1 + 2p - 6p = 9 \\
 \hline
 -4p = 8 \\
 \hline
 p = -2
 \end{array}$$

$$\begin{array}{r}
 -8(6+2p) - 4 = -148 \\
 -48 - 16p - 4 = -148 \\
 -52 - 16p = -148 \\
 \hline
 -16p = -96 \\
 \hline
 p = 6
 \end{array}$$

$$\begin{array}{r}
 -8v - 5 - 1 = 22 \\
 -8v + 6 = 22 \\
 \hline
 -8v = 16 \\
 \hline
 v = -2
 \end{array}$$

DO NOW ~ Halloween

Solve the following equation. Show all of your work.

$$8 = 4n + 8 + 5n$$

$$\begin{array}{r} 8 = 4n + 8 + 5n \\ -8 \quad -8 \\ \hline 0 = 9n \\ \frac{0}{9} = \frac{9n}{9} \end{array}$$

STOP STOP STOP

$$0 = n$$

Classwork

Solve the following equations. Show all of your work.

$$4(-k - 6) + 3(6k + 6) = 78$$

$$\begin{array}{r} -4k - 24 + 18k + 18 = 78 \\ 14k - 6 = 78 \\ +6 \quad +6 \\ \hline 14k = 84 \\ \frac{14k}{14} = \frac{84}{14} \\ k = 6 \end{array}$$

$$-43 = -7(1 - 4n) - 2(6 + 2n)$$

$$\begin{array}{r} -43 = -7 + 28n - 12 - 4n \\ -43 = 24n - 19 \\ +19 \quad +19 \\ \hline -24 = 24n \\ \frac{-24}{24} = \frac{24n}{24} \\ -1 = n \end{array}$$

$$4 = r - 2 + 4$$

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

$$-3(1 + 4r) = -63$$

$$\begin{array}{r} -3 - 12r = -63 \\ +3 \quad +3 \\ \hline -12r = -60 \\ \frac{-12r}{-12} = \frac{-60}{-12} \\ r = 5 \end{array}$$

DO NOW ~ Friday 11/1

Solve the following equation. Show all of your work.

$$\begin{array}{r}
 5x + 4 + 6 = 10 \\
 5x + 10 = 10 \\
 \underline{-10} \quad \underline{-10} \\
 5x = 0 \\
 \underline{\div 5} \quad \underline{\div 5} \\
 x = 0
 \end{array}$$

$$X = 0$$



Classwork

Solve the following equations. Show all of your work.

$$\begin{array}{r}
 3 \cdot \frac{v+9}{3} = 8 \cdot 3 \\
 v+9 = 24 \\
 \underline{-9} \quad \underline{-9} \\
 v = 15
 \end{array}$$

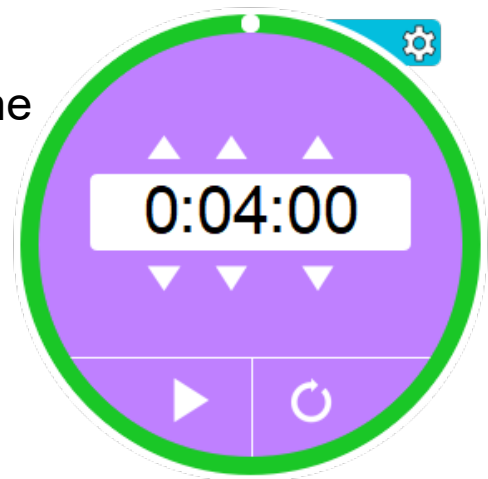
$$\begin{array}{r}
 -1 = \frac{5+x}{6} \\
 -6 = 5+x \\
 \underline{-5} \quad \underline{-5} \\
 -11 = x
 \end{array}$$

$$\begin{array}{r}
 3(1+3b) + 3(7b-3) = 54 \\
 3 + 9b + 21b - 9 = 54 \\
 -6 + 30b = 54 \\
 \underline{+6} \quad \underline{+6} \\
 30b = 60 \\
 \underline{\div 30} \quad \underline{\div 30} \\
 b = 2
 \end{array}$$

$$\begin{array}{r}
 26 = -1(6-4r) + 4(8-3r) \\
 26 = -6 + 4r + 32 - 12r \\
 26 = -8r + 26 \\
 \underline{-26} \quad \underline{-26} \\
 0 = -8r \\
 \underline{\div -8} \quad \underline{\div -8} \\
 0 = r
 \end{array}$$

To earn your full participation point for the Do Now be sure to have completed all of the following by the time is up:

- 1) Be in your seat
- 2) Take out your calculator or grab one
- 3) Have last night's homework out
- 4) Complete the do now



DO NOW ~ Monday 11/4

Solve the following equation. Show all of your work.

$$\begin{array}{r} -3a + 2a = -2 \\ -1a = -2 \\ \hline a = +2 \end{array}$$

STOP STOP STOP

Classwork

Solve the following equations. Show all of your work.

$$\begin{array}{r} -140 = a + 4(4a - 1) \\ -140 = a + 16a - 4 \\ -140 = 17a - 4 \\ +4 \quad +4 \\ \hline -136 = 17a \\ \frac{-136}{17} = \frac{17a}{17} \quad -8 = a \end{array}$$

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

$$\begin{array}{r} (n - 2) - 2(-8n + 4) = 24 \\ -1n + 2 + 16n - 8 = 24 \\ 15n - 6 = 24 \\ +6 \quad +6 \\ \hline 15n = 30 \\ \frac{15n}{15} = \frac{30}{15} \\ n = 2 \end{array}$$

$$\begin{array}{r} -192 = -6(1 - 5a) - 6 \\ -192 = -6 + 30a - 6 \\ -192 = -12 + 30a \\ +12 \quad +12 \\ \hline -180 = 30a \\ \frac{-180}{30} = \frac{30a}{30} \\ -6 = a \end{array}$$

Mrs. Ferreri's Station ~ Solving Multi-Step Equations

Solve the following equations. Show each step.

1) $-282 = 7(-7n - 6) + 5$

2) $7 - 2(4 + 6n) = -85$

3) $232 = 4(1 + 7x) + 4$

4) $6 - 3(-7 - 3n) = 90$

5) $-78 = -7(4 - 2n) - 6(8n - 3)$

6) $-5(1 - 5x) + 6(2x + 3) = 50$

7) $3(5 - 7m) + 6(3m + 8) = 48$

8) $-2(x + 1) + 3(1 + 8x) = 45$

Continue onto the next page.

1) $1 = 4(b - 6) - 5(b - 4)$

2) $-8(3 - 8n) - 5(7n - 6) = 64$

3) $-42 = 5(a - 7) - 7(1 - 4a)$

4) $34 = -4(4x + 7) - 7(6 - 6x)$

5) $-64 = 8(2v - 3) - 8(-8v - 5)$

6) $6(n - 1) - 7(-6n + 1) = 35$

7) $-5(-5 + 6x) + 8(1 - 2x) = -59$

8) $-21 = 7(x - 8) - 7(1 - 5x)$

11) $275 = -6(7p + 2) + p$

12) $184 = 2 + 7(6x - 4)$

Computer Station ~ *Delta Math*

Complete the assignment called, "Solving Linear Equations using the Distributive Property."

You must show your work below:

Mrs. Kennedy's Station ~ Solving Multi-Step Equations

Solve the following equations and check.

1) $10 = -2 + v + v$

2) $-5n - 1 - 1 = 18$

3) $-4p - 1 + 3 = -10$

4) $4n + 5n = -18$

5) $-7 = x - 5 - 4$

6) $n - 4 - 5n = 16$

7) $-2 + 2x - 6 = 2$

8) $-2r + 2 + 5r = -10$

9) $2r - 4 + 5 = -5$

10) $-2k + 3k = -3$

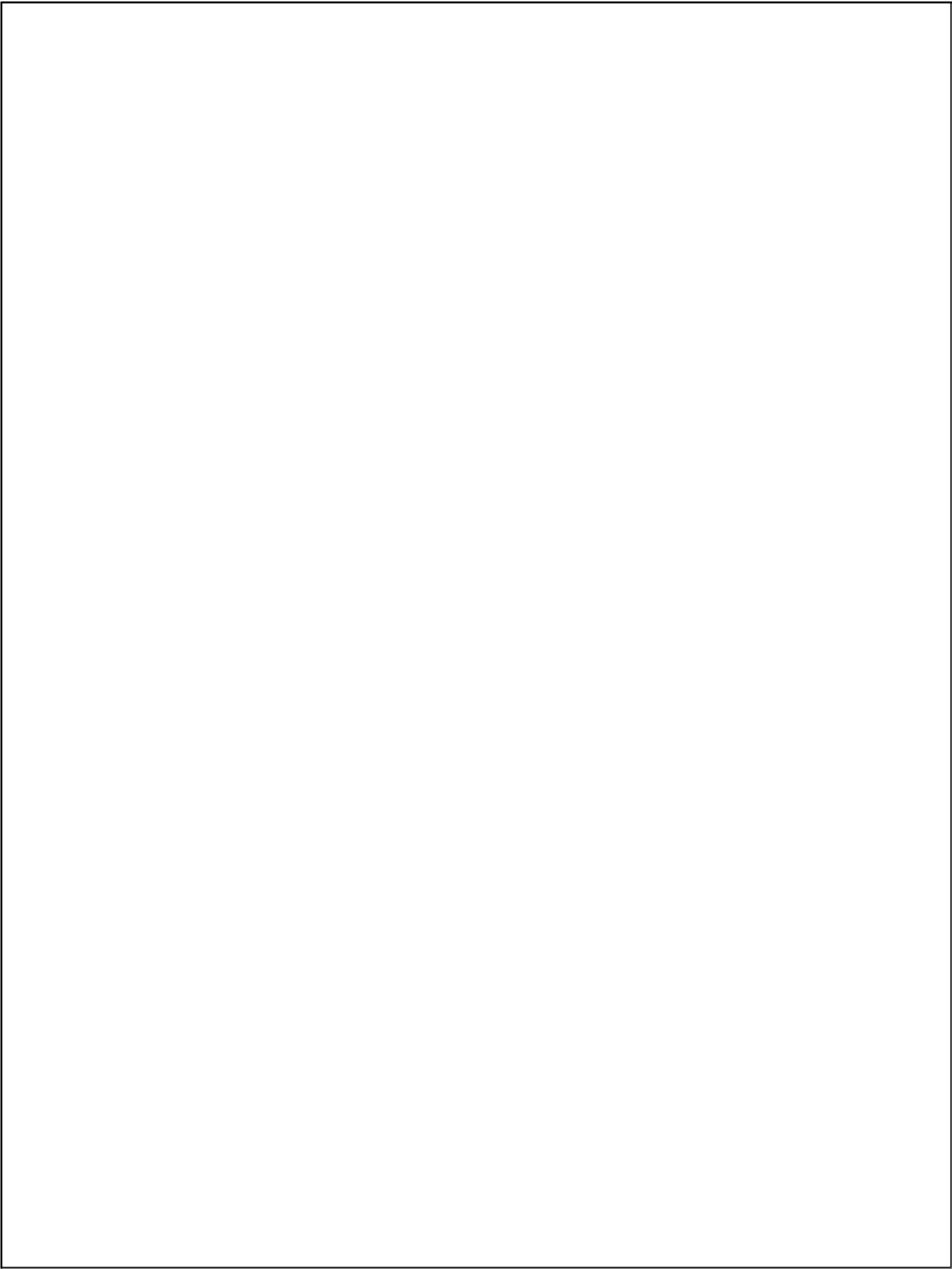
11) $3 = x - 3 - 2x$

12) $-5 - 6n + 2 = 15$

Continue onto next page.

Player 1 choose a problem for both players to solve on whiteboards. If Player 1 solves the equation correctly, then he or she gets the space. Player 2's turn. Play until someone gets three in a row.

$8(x + 2) = 48$	$7x - 6 - 3x = 6$	$x + 2(x - 7) = 4$
$5x + 8 - x = 32$	$\frac{1}{3}(6x + 21) - 4x = 15$	$5(x - 1) = 35$
$3x + 4.5x = 15$	$13 + 2(5x - 2) = 29$	$2x + 7 + 3x = -41$



Independent Station ~ Multi-step Equations

Solve the following equations. Show each step.

1) $7(1 + 7p) = 252$

2) $-145 = -5(1 - 7n)$

3) $-8(1 - 3k) = -152$

4) $81 = -3(5a - 7)$

5) $7(7 + 2n) = 119$

6) $8(-3 - 5m) = -344$

7) $6(4x + 5) = 126$

8) $5(3n - 7) = -125$

9) $126 = -6(7 + 7x)$

10) $294 = 6(1 + 8x)$

11) $-85 = -5(5 + 2b)$

12) $-4(8 - 2v) = -88$

13) $-8(-4b + 2) = -208$

14) $-2(-7v - 7) = 98$

Continue onto next page.

$$\frac{n+5}{-16} = -1$$

$$\frac{v+9}{15} = 0$$

$$13 = \frac{w-14}{2}$$

$$\frac{x+3}{2} = 5$$

$$\frac{a-4}{3} = -7$$

$$\frac{k+1}{-2} = -8$$

$$\frac{4-x}{3} = -7$$

$$\frac{k-10}{2} = -7$$

Continue onto the next page.

$$\frac{n-5}{2}=5$$

$$\frac{9+m}{3}=2$$

$$\frac{-5+x}{22}=-1$$

$$\frac{x+9}{2}=3$$

$$\frac{-12+x}{11}=-3$$

$$\frac{-4+x}{2}=6$$

$$\frac{b+11}{3}=-2$$

$$\frac{m-13}{2}=-8$$

$$\frac{a-10}{3}=-4$$

$$\frac{p+8}{-2}=10$$

Homework ~ Wednesday 11/30

Solve the following equations. Show all of your work.

$$7 = 3x - 6 - 8$$

$$-5(5 + 4x) - 4 = 111$$

$$24 = 6(5n + 4) + 6(n + 6)$$

$$2(x + 6) + 3(1 + 4x) = 57$$

Homework ~ Halloween

Solve the following equations. Show all of your work.

$$a + 2 + 7a = -14$$

$$-92 = -4 + 8(a - 5)$$

$$-8(5k + 6) - 5(4 + 6k) = 72$$

$$37 = 5(1 - 4a) - 4(2 - 3a)$$

Homework ~ Monday 11/4

Solve the following equations. Show all of your work.

$$5(7x + 8) - (1 + 4x) = 70$$

$$-390 = 2 - 8(-7p + 7)$$

$$-21 = 1 - 7v - 4v$$

$$-3 = 4(b + 7) - 7(7 - 2b)$$