

Name: _____ Algebra 9 Unit 2 Lesson 3

Solving Equations by Moving the Variable

DO NOW ~ Wednesday 11/6

Solve the following equation. Show all of your work.

$$\begin{array}{r}
 \boxed{1} - 7n - \boxed{6} = -19 \\
 -8 - 7n = -19 \\
 +8 \quad +8 \\
 \hline
 -7n = -11 \\
 \times -1 \\
 \hline
 7n = 11 \\
 \div 7 \quad \div 7 \\
 n = \frac{11}{7}
 \end{array}$$

$$n = 2$$

Classwork

Checklist for solving equations.

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

$$\begin{array}{r}
 -11 - 2a = a + 1 \\
 +2a \quad +2a \\
 \hline
 -11 = 3a + 1 \\
 -1 \quad -1 \\
 \hline
 -12 = 3a \\
 \div 3 \quad \div 3 \\
 -4 = a
 \end{array}$$

$$\begin{array}{r}
 5 + a = 3 + 2a - 6 \\
 5 + a = -3 + 2a \\
 -2a \quad -2a \\
 \hline
 5 - a = -3 \\
 -5 \quad -5 \\
 \hline
 -a = -8 \\
 \times -1 \quad \times -1 \\
 a = 8
 \end{array}$$

$$\begin{array}{r}
 8 - 6b + 8b = b + 1 \\
 2b + 8 = b + 1 \\
 -2b \quad -2b \\
 \hline
 8 = -b + 1 \\
 -8 \quad -8 \\
 \hline
 0 = -b - 7 \\
 \div -1 \quad \div -1 \\
 0 = b - 7 \\
 +7 \quad +7 \\
 7 = b
 \end{array}$$

DO NOW ~ Thursday 11/7

Solve the following equation. Show all of your work.

$$\begin{array}{r}
 -11 - 2a = a + 1 \\
 +2a \quad +2a \\
 \hline
 -11 = 3a + 1 \\
 -1 = -1 \\
 \hline
 -12 = 3a \\
 \div 3 \quad \div 3 \\
 -4 = a
 \end{array}$$

~~D~~
~~C~~
~~M~~
2

Classwork

Solve the following equations. Show all of your work. USE THE CHECKLIST from yesterday!

$$\begin{array}{r}
 -8 + 6x = 8x - 2 \\
 -6x \quad -6x \\
 \hline
 -8 = 2x - 2 \\
 +2 \quad +2 \\
 \hline
 -6 = 2x \\
 \div 2 \quad \div 2 \\
 -3 = x
 \end{array}$$

~~D~~
~~C~~
~~M~~
2

$$\begin{array}{r}
 8 - n = 7n - 4n \\
 8 - n = 3n \\
 +1n \quad +1n \\
 \hline
 8 = 4n \\
 \div 4 \quad \div 4 \\
 2 = n
 \end{array}$$

~~D~~
~~C~~
~~M~~
2

$$\begin{array}{r}
 5(1 - 8n) = 39 - 6n \\
 5 - 40n = 39 - 6n \\
 +6n \quad +6n \\
 \hline
 5 - 34n = 39 \\
 -5 \quad -5 \\
 \hline
 -34n = 34 \\
 \div -34 \quad \div -34 \\
 n = -1
 \end{array}$$

~~D~~
~~C~~
~~M~~
2

$$\begin{array}{r}
 -2 + 5r = 2(2r - 2) + 2 \\
 -2 + 5r = 4r - 4 + 2 \\
 -2 + 5r = 4r - 2 \\
 -5r \quad -5r \\
 \hline
 -2 = -1r - 2 \\
 +2 \quad +2 \\
 \hline
 0 = -1r \\
 \div -1 \quad \div -1 \\
 0 = r
 \end{array}$$

~~D~~
~~C~~
~~M~~
2

DO NOW ~ Friday 11/8

Solve the following equation. Show all of your work.

no solution

$$\begin{array}{r} 2 + b = b - 4 \\ -1b \quad -1b \\ \hline 2 = -4 \end{array}$$

~~no~~
more
2

2(x-4)

2x - 8

$3x + 4x$
7x



Classwork

Solve showing all of the steps.

~~no~~
more
2

$$\begin{array}{r} 1 - 3m = 7 - 4m \\ +4m \quad +4m \\ \hline 1 + 1m = 7 \\ -1 \\ \hline 1m = 6 \quad (m=6) \end{array}$$

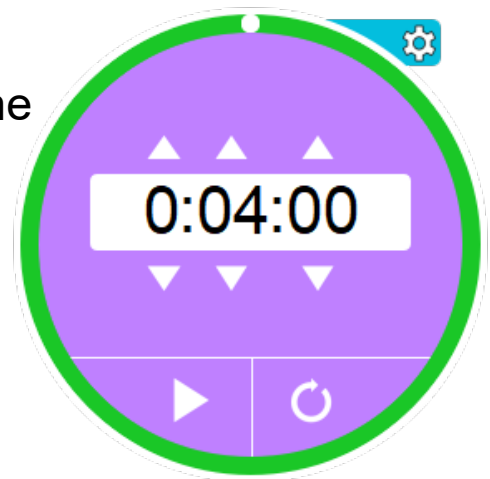
$$\begin{array}{r} 10 + 1 + 2r = r - 2 \\ 6 + 2r = r - 2 \\ -2r \quad -2r \\ \hline 6 = -r - 2 \\ +2 \quad +2 \\ \hline 8 = -r \quad (-8=r) \end{array}$$

$$\begin{array}{r} 5(r-5) = 2r - 7 \\ 5r - 25 = 2r - 7 \\ -2r \quad -2r \\ \hline 3r - 25 = -7 \\ +25 \quad +25 \\ \hline 3r = 18 \\ \div 3 \quad \div 3 \\ \hline r = 6 \end{array}$$

$$\begin{array}{r} 2 + 3(5x+6) = 8 + 3x \\ 2 + 15x + 18 = 8 + 3x \\ 20 + 15x = 8 + 3x \\ -15x \quad -15x \\ \hline 20 = 8 - 12x \\ -8 \quad -8 \\ \hline 12 = -12x \\ -12 \quad -12 \\ \hline -1 = x \end{array}$$

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 ~ Tuesday 11/12

Solve the following equation. Show all of your work.

$$\frac{14}{2} = \frac{2n}{2}$$

$$7 = n$$

$$10 + 6n = n - 4 + 7n$$

$$10 + 6n = 8n - 4$$

$$-6n \quad -6n$$

$$10 = 2n - 4$$

$$+4 \quad +4$$

$$14 = 2n$$

$$\frac{14}{2} = \frac{2n}{2}$$

$$7 = n$$

STOP STOP STOP

Classwork

Solve the following equations. Show all of your work. USE THE CHECKLIST.

$$34 - 4k = -2k + 4(k - 2)$$

$$34 - 4k = -2k + 4k - 8$$

$$34 - 4k + 2k = 4k - 8$$

$$+4k \quad +4k$$

$$34 = 6k - 8$$

$$+8 \quad +8$$

$$42 = 6k$$

$$\frac{42}{6} = \frac{6k}{6}$$

$$7 = k$$

$$3(a + 6) = 6(a + 3)$$

$$3a + 18 = 6a + 18$$

$$-3a \quad -3a$$

$$18 = 3a + 18$$

$$-18 \quad -18$$

$$0 = 3a$$

$$\frac{0}{3} = \frac{3a}{3}$$

$$0 = a$$

$$-3k + 2(k + 4) = -6k + 18$$

$$-3k + 2k + 8 = -6k + 18$$

$$-k + 8 = -6k + 18$$

$$+6k \quad +6k$$

$$5k + 8 = 18$$

$$-8 \quad -8$$

$$5k = 10$$

$$\frac{5k}{5} = \frac{10}{5}$$

$$k = 2$$

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

Solve the following equations. Show your work.

1) $8(6x + 4) + 2x = 32 - 5x$

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

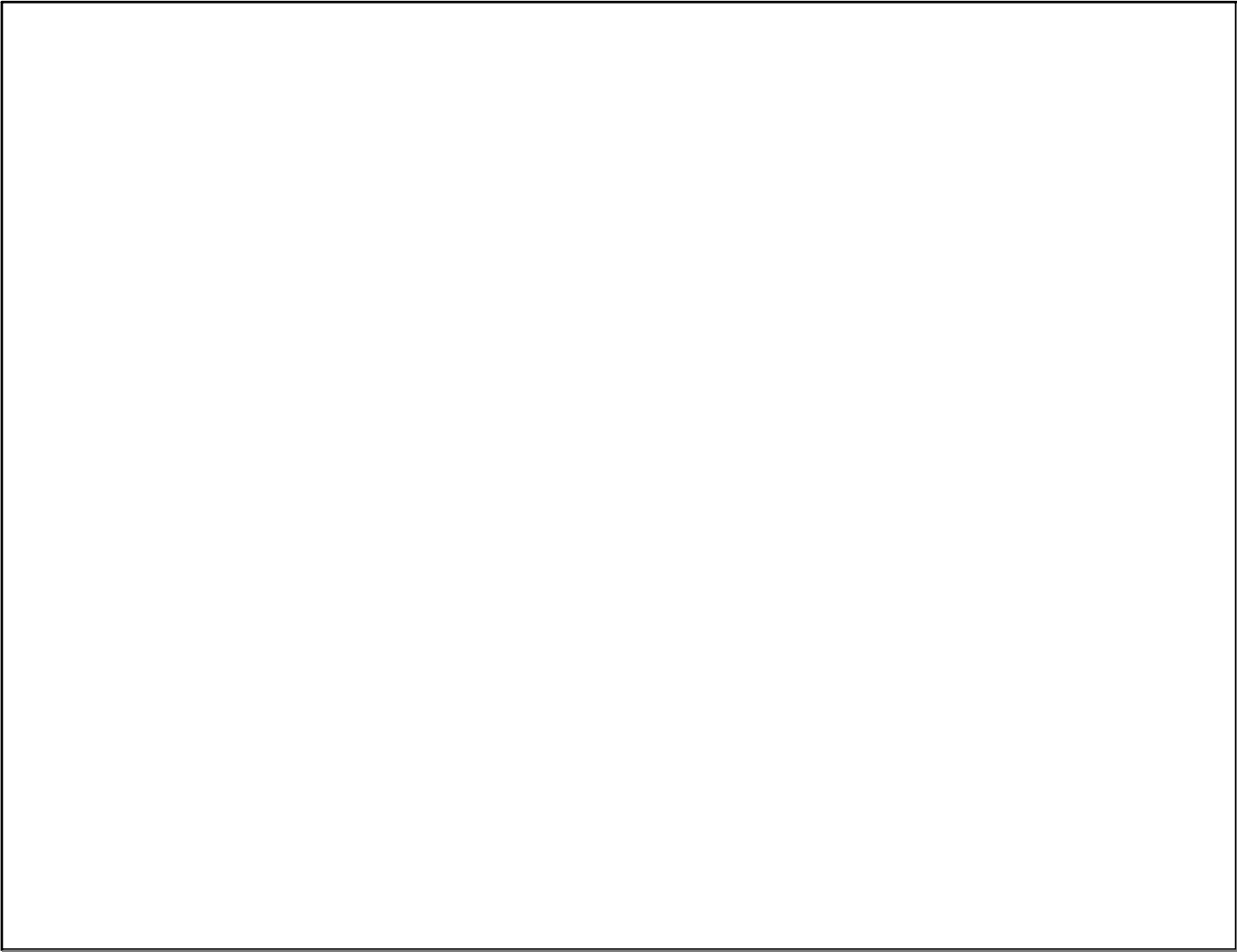
3) $-24 - 8r = -4(6 - 3r)$

4) $-2 + 8(k - 3) = -8 + 2k$

5) $-8m + 28 = -4(m - 4)$

6) $-5(-2 + 5x) = -34 - 3x$

Continue onto next page.



Solve the following equations. Show your work.

1) $4(n - 6) = 4(8n + 1)$

2) $-4(4k + 4) = 2(-7k - 4)$

3) $7p + 5p = -6(-3 + 5p) - 6(p + 3)$

4) $-2(x + 2) = -(7 + 7x) + 8x$

5) $-2(1 + 7n) = -2(1 - 6n)$

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

Computer Station ~ Delta Math

Complete the assignment, "Solving Equations by Combining Like Terms." This will be your first grade of QUARTER 2.

Show your work here:

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

Solve the following equations. Show your work.

1) $1 - 7n = 1 + n$

2) $5 - 3x = 1 - 7x$

3) $11 - 6b = -3b + 8b$

4) $-6 - 5k + 8k - 8 = k + 2$

5) $16 + 7x - 6x = 7x + 4$

6) $-14 + 3n = n - 1 + 1$

Continue onto next page.

Solve the following equations. Show your work.

1) $8x - 9 = 1 - 2x$

2) $4 + 3n + 4n = 8n + 7$

3) $-6b + 1 - 5 = 1 - 5b$

4) $8x + 6 = -6 - 3x + 7x$

5) $4x + 4x = 15 + 5x$

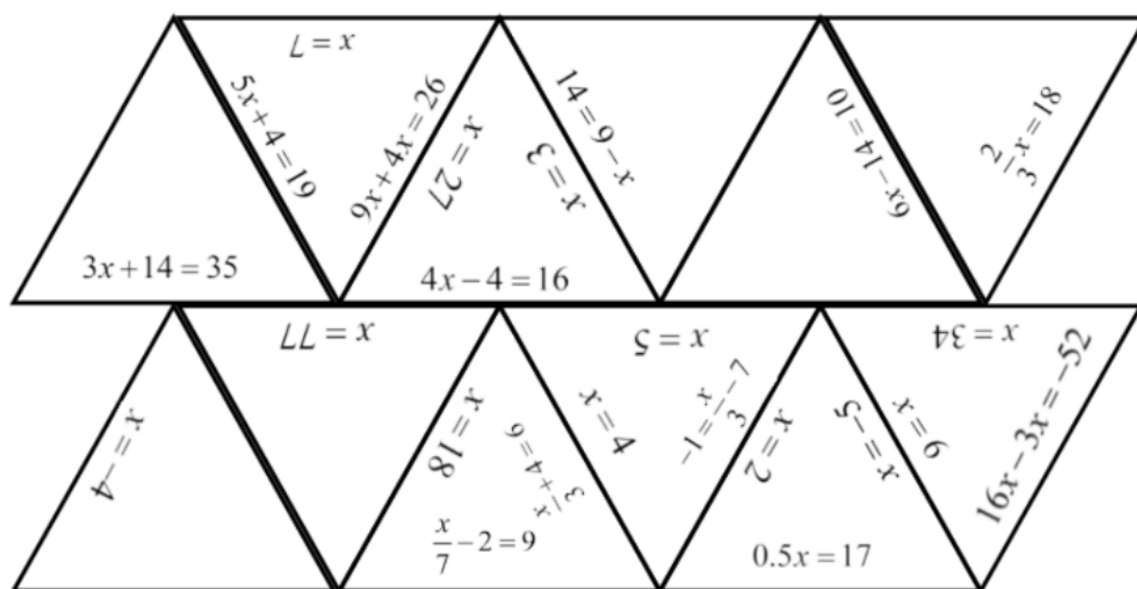
6) $v + 3 - 7v = 2v - 5$

Independent Station ~ Puzzle

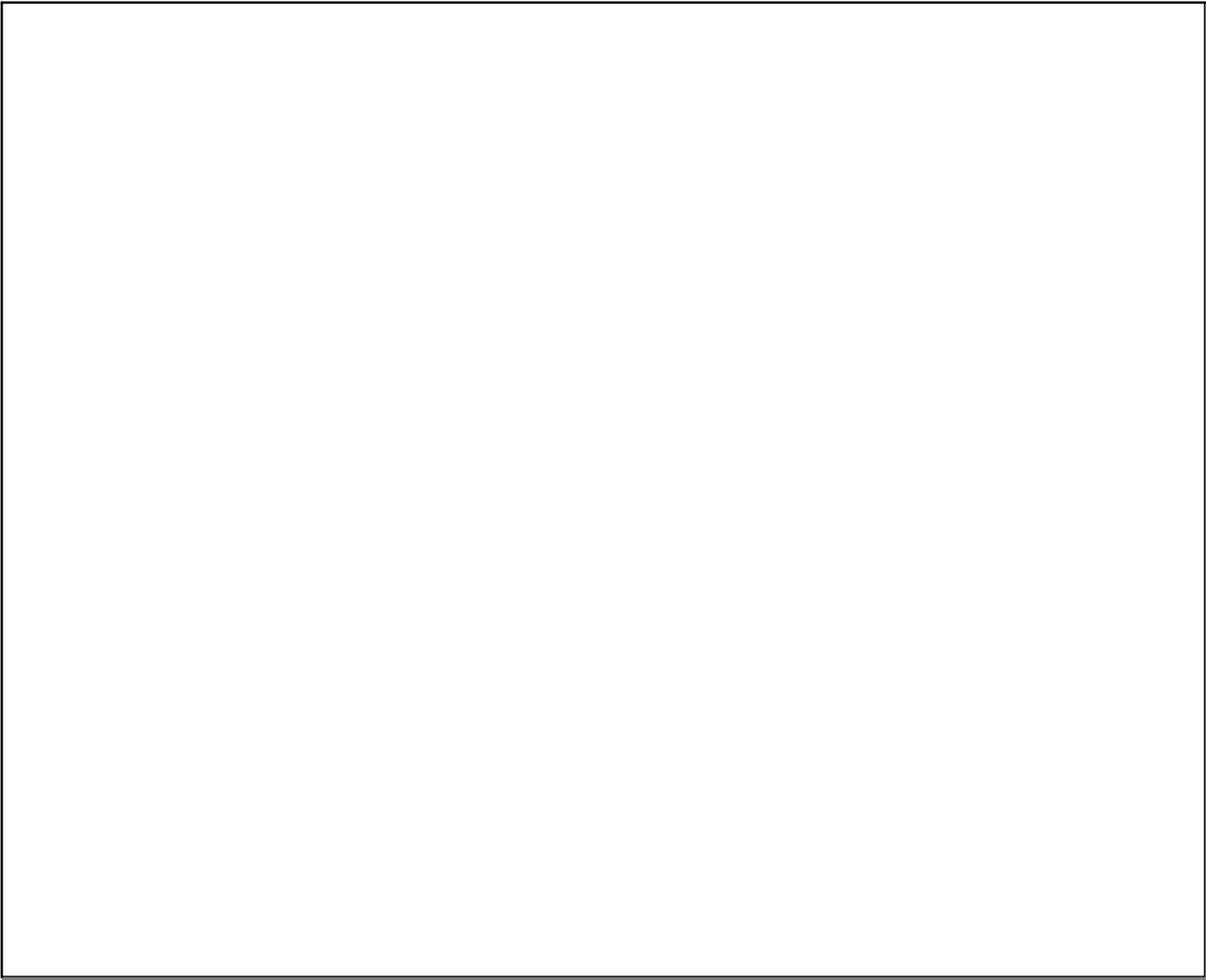
1) Cut out each triangle.

2) Solve the equations and find their solutions.

3) Line up the equations with its solution and it should create a STAR.



Show work using a whiteboard.



Homework ~ Wednesday 11/6

Solve the following equations. Show all of your work.

$$193 = -5(6r + 1) - 3r$$

$$4v + 6 = 5v - 1$$

$$155 = 5(6b - 5)$$

$$8x - 7 = x - 2 + 6x$$

Homework ~ Thursday 11/7

Solve the following equations. Show all of your work.

$$3(1 - 4x) = -93$$

$$7x + 5 = 8 + 7 + 2x + 7x$$

$$-6(3n + 3) = 108$$

$$-15 + 4a + 8a = 8a + 5$$

Homework ~ Tuesday 11/12

Solve the following equations. Show all of your work.

$$2(-6 + x) = 4(x - 8) - 2$$

$$3(-7 - 4k) = 1 - 2(k - 4)$$

$$-7(-3 + 3a) = 6a - 33$$

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

[illegible]