

- **Mid-Chapter 2 quiz is tomorrow.**
- Vocab is NOT included on Mid-Ch. 2 quiz.
- Use this study guide to help you study. You may work with ONE partner or on your own. You may use your notes to help you.
- You are welcome to come in for lunch tomorrow to get help or to review.
- This is NOT homework if not finished in class.
- You can find answers for the study guide this evening on my classroom website: [mmswindlandmath.weebly.com](http://mmswindlandmath.weebly.com)

## Lesson 2.1

**Translate each sentence into an equation.**

1. The difference of the square of  $y$  and twelve is the same as the product of five and  $x$ .

$$y^2 - 12 = 5x$$

**Translate each equation into a sentence.**

2.  $2b - 10 = 4$

i.e. Two times  $b$  minus ten is four.

3.  $y + 3x^2 = 5x$

i.e.  $y$  plus three times  $x$  squared is the same as five times  $x$ .

## Lessons 2.2/2.3

*\*Know how to solve AND check one-step & two-step equations!*

**Solve each equation.**

$$4. d - 8 = 6$$

$$d = 14$$

$$5. -28 = p + 21$$

$$p = -49$$

$$6. -7x = 63$$

$$x = -9$$

$$7. -\frac{t}{5} = -8$$

$$t = 40$$

$$8. 3x + 8 = 29$$

$$3x = 21$$

$$x = 7$$

$$9. \frac{a}{6} - 5 = 9$$

$$a/6 = 14$$

$$a = 84$$

## Lesson 2.3

*\*Know how to solve using the method we used in class.*

Type	Words	Symbols
Consecutive Integers	Integers that come in counting order.	$n, n + 1, n + 2, \dots$
Consecutive Even Integers	Even integer followed by the next even integer.	$n, n + 2, n + 4, \dots$
Consecutive Odd Integers	Odd integer followed by the next odd integer.	$n, n + 2, n + 4, \dots$

**Find three consecutive integers whose sum is 36.**

$$n + (n+1) + (n+2) = 36$$

$$n + n + 1 + n + 2 = 36$$

$$3n + 3 = 36$$

$$3n = 33$$

$$n = 11$$

$$n = 11$$

$$n+1 = 11+1 = 12$$

$$n+2 = 11+2 = 13$$

## Lesson 2.3

*\*Know how to solve using the method we used in class.*

Type	Words	Symbols
Consecutive Integers	Integers that come in counting order.	$n, n + 1, n + 2, \dots$
Consecutive Even Integers	Even integer followed by the next even integer.	$n, n + 2, n + 4, \dots$
Consecutive Odd Integers	Odd integer followed by the next odd integer.	$n, n + 2, n + 4, \dots$

**Find three consecutive odd integers whose sum is 117.**

$$n + (n+2) + (n+4) = 117$$

$$n + n + 2 + n + 4 = 117 \quad n = \textcircled{37}$$

$$3n + 6 = 117 \quad n+2 = 37+2 = \textcircled{39}$$

$$3n = 111 \quad n+4 = 37+4 = \textcircled{41}$$

$$n = 37$$

## Lesson 2.3

*\*Know how to solve using the method we used in class.*

Type	Words	Symbols
Consecutive Integers	Integers that come in counting order.	$n, n + 1, n + 2, \dots$
Consecutive Even Integers	Even integer followed by the next even integer.	$n, n + 2, n + 4, \dots$
Consecutive Odd Integers	Odd integer followed by the next odd integer.	$n, n + 2, n + 4, \dots$

**Find two consecutive even integers whose sum is 126.**

$$n + (n+2) = 126$$

$$n + n + 2 = 126 \quad n = \textcircled{62}$$

$$2n + 2 = 126 \quad n+2 = 62+2 = \textcircled{64}$$

$$2n = 124$$

$$n = 62$$

## Lesson 2.4

*\*Know how to solve AND check multi-step equations!*

10. MULTIPLE CHOICE Solve  $\frac{5r}{2} - 6 = 19$ .

A 2.5

B 5

C -5.25

**D 10**

$$\frac{5r}{2} - 6 = 19$$

$$+6 \quad +6$$

$$\frac{5r}{2} = 25$$

$$5r = 50$$

$$r = 10$$

## Lesson 2.4

*\*Know how to solve AND check multi-step equations!*

**Solve each equation.**

1.  $7n + 6 = 4n - 9$

$$7n + 6 = 4n - 9$$

$$-4n \quad -4n$$

$$3n + 6 = -9$$

$$-6 \quad -6$$

$$\underline{3n} = \underline{-15}$$

$$3 \quad 3$$

$$\boxed{n = -5}$$

2.  $3b - 13 + 4b = 7b + 1$

$$7b - 13 = 7b + 1$$

$$-7b \quad -7b$$

$$-13 \neq 1$$

**No Solution**

## Lesson 2.4

*\*Know how to solve AND check multi-step equations!*

$$3. 5 - 3(w + 4) = w - 7$$

$$5 - 3w - 12 = w - 7$$

$$-7 - 3w = w - 7$$

$$+3w \quad +3w$$

$$-7 = 4w - 7$$

$$+7 \quad +7$$

$$0 = 4w$$

$$\frac{4}{4} \quad \frac{4}{4}$$

$$0 = w$$

$$4. 2x - 5(x - 3) = 2(x - 10)$$

$$2x - 5x + 15 = 2x - 20$$

$$-3x + 15 = 2x - 20$$

$$+3x \quad +3x$$

$$15 = 5x - 20$$

$$+20 \quad +20$$

$$35 = 5x$$

$$\frac{35}{5} = \frac{5x}{5}$$

$$7 = x$$

## Lesson 2.4

*\*Know how to solve AND check multi-step equations!*

**5. MULTIPLE CHOICE** Solve  $-6(2r + 8) = -10(r - 3)$ .

**A** -11

**B** -156

**C** -39

**D** 9

$$-12r - 48 = -10r + 30$$

$$+12r \quad +12r$$

$$-48 = 2r + 30$$

$$-30 \quad -30$$

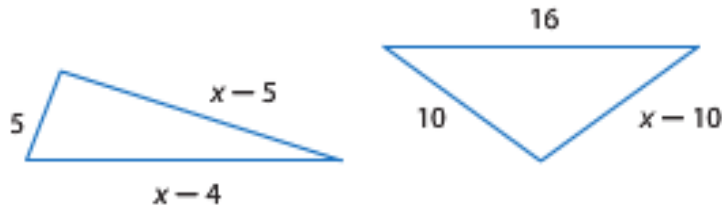
$$-78 = 2r$$

$$\frac{-78}{2} = \frac{2r}{2}$$

$$-39 = r$$

*\*Find the value of  $x$  by setting up and solving a multi-step equation.*

20. **PERIMETER** Find the value of  $x$  so that the triangles have the same perimeter. (Lesson 2-4)



$$\text{Triangle 1} = 5 + x - 4 + x - 5 = 2x - 4$$

$$\text{Triangle 2} = 10 + 16 + x - 10 = 16 + x$$

---


$$2x - 4 = 16 + x$$

$$x - 4 = 16$$

$$\boxed{x = 20}$$

Lesson 2.5

- Evaluate  $15 - |2 - 3k|$  if  $k=2$

$$15 - |2 - 3 \cdot 2| = 15 - |2 - 6| = 15 - |-4| = 15 - 4 = \boxed{11}$$

- Evaluate  $|2b - 5| + 1$  if  $b=1$

$$|2 \cdot 1 - 5| + 1 = |2 - 5| + 1 = |-3| + 1 = 3 + 1 = \boxed{4}$$

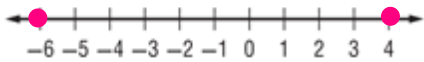
- Evaluate  $2|m - 3x| - p$  if  $m = -1$ ,  $x = 2$ ,  $p = -4$

$$\begin{aligned} 2|-1 - 3 \cdot 2| - (-4) &= 2|-1 - 6| + 4 = 2|-7| + 4 = 2 \cdot 7 + 4 \\ &= 14 + 4 = 18 \end{aligned}$$

## Lesson 2.5

*\*Solve each equation **AND** graph the solution set.*

5.  $|w+1|=5$



$$w+1=5 \quad w+1=-5$$

$$-1 \quad -1 \quad -1 \quad -1$$

$$w = 4 \quad w = -6$$

6.  $|c-3|=1$



$$c-3=1 \quad c-3=-1$$

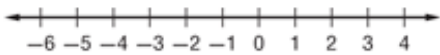
$$+3 \quad +3 \quad +3 \quad +3$$

$$c = 4 \quad c = 2$$

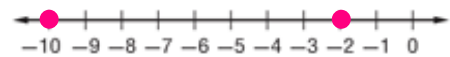
## Lesson 2.5

*\*Solve each equation **AND** graph the solution set.*

7.  $|n+2|=-1$



8.  $|t+6|=4$



$$t+6=4 \quad t+6=-4$$

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

$$t = -2 \quad t = -10$$

## Lesson 2.5

*\*Write an equation involving absolute value for each graph.*

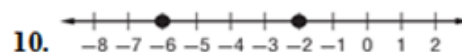
$$|\text{variable} - \text{midpoint}| = \text{distance}$$



$$\text{midpoint} = 6$$

$$\text{distance} = 5$$

$$|x - 6| = 5$$



$$\text{midpoint} = -4$$

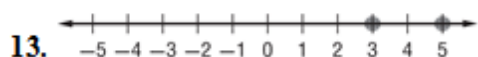
$$\text{distance} = 2$$

$$|x + 4| = 2$$

## Lesson 2.5

*\*Write an equation involving absolute value for each graph.*

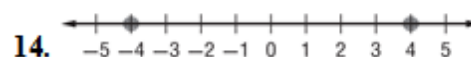
$$|\text{variable} - \text{midpoint}| = \text{distance}$$



$$\text{midpoint} = 4$$

$$\text{distance} = 1$$

$$|x - 4| = 1$$



$$\text{midpoint} = 0$$

$$\text{distance} = 4$$

$$|x| = 4$$



## Lesson 2.5

- 25. COFFEE** Some say to brew an excellent cup of coffee, you must have a brewing temperature of  $200^{\circ}\text{F}$ , plus or minus 5 degrees. Write and solve an equation describing the maximum and minimum brewing temperatures for an excellent cup of coffee.

$$|\text{variable} - \text{midpoint}| = \text{distance} \text{ ----> } \underline{|t - 200| = 5}$$

$$\text{Maximum ----> } \underline{205^{\circ}}$$

$$\text{Minimum ----> } \underline{195^{\circ}}$$

## Lesson 2.5

**TEMPERATURE** A thermometer is guaranteed to give a temperature no more than  $1.2^{\circ}\text{F}$  from the actual temperature. If the thermometer reads  $28^{\circ}\text{F}$ , write and solve an equation to find the maximum and minimum temperatures it could be.

$$|\text{variable} - \text{midpoint}| = \text{distance} \text{ ----> } \underline{|x - 28| = 1.2}$$

$$\text{Maximum ----> } \underline{29.2^{\circ}}$$

$$\text{Minimum ----> } \underline{26.8^{\circ}}$$

**FITNESS** Taisha uses the elliptical cross-trainer at the gym. Her general goal is to burn 280 Calories per workout, but she varies by as much as 25 Calories from this amount on any given day. Write and solve an equation to find the maximum and minimum number of Calories Taisha burns on the cross-trainer.

$$|\text{variable} - \text{midpoint}| = \text{distance} \text{ ----> } \underline{|x - 280| = 25}$$

$$\text{Maximum ----> } \underline{305}$$

$$\text{Minimum ----> } \underline{255}$$