Key _____ Date:_____ Hour:_____

## CHAPTER 2-Review Sheet

**Part 1: Read the scenario and write a function. The first one has been done for you.**

1. Mark drives his scooter to the park at a constant speed for 4 minutes. Let s be the speed, and d be the distance. Write a function to represent distance as a function of speed.

   ***d(s) = 4s***

2. Laura is selling popcorn after school. She is selling each bag for $1.25. Let *p* be the popcorn and *m* be the sales. Write a function to represent Laura's sales as a function of popcorn.

   $m(p) = 1.25p$

3. George and Paul are saving for a trip to Hawaii. They decide to walk dogs to raise money. They already saved $47 from shoveling snow. They will charge $9 for each dog they walk.

   Function: $f(x) = 9x + 47$

   Define your variables: $f(x)$ = total money saved

   $x$ = # dogs walked

4. Mia received a $65 gift card for Dave and Busters for her birthday. She spent $14 on lunch, and now she wants to play basketball, because that's her favorite. Each game costs $1.75. Write a function to represent the amount of money she has on the gift card.

   Function: $f(x) = 51 - 1.75x$

   Define your variables: let $x$ = # games

   $f(x)$ = total money on card

**Part 2: Use your graphing calc. to find the intersection point.Use windows [-25, 25] X [-25, 25].**

1. f(x) = 5x - 6
   f(x) = 10.35

   (3.27, 10.35)

2. f(x) = -8x + 12
   f(x) = 21.5

   (-1.1875, 21.5)

3. f(x) = -5.4x - 6.2
   f(x) = -8.2

   (.3704, -8.2)

**What does the ordered pair (intersection point) mean?**

- The solution
- The only x+y value to make both equations true!

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## CHAPTER 2-Review Sheet

**Part 3: Read the scenario and write an inequality.**

1. Amber saved $240 for her vacation. She has already spent $75 at one souvenir shop. She would like to go to the amusement park every day for the rest of her vacation. Each ride she goes on costs her $3.

$3x + 75 \leq 240$ $75 + 3x \leq 240$

2. Mark plays for the varsity basketball team. As soon as he made the team his grandpa gave him $5 to congratulate him. Then, his grandpa told Mark he would give him $2 for every time he scored in the game. He is hoping to save up for a new pair of shoes that cost $108.

$2x + 5 \geq 108$

**Part 4: Solve the inequalities that you wrote in Part 3.**

1. What is the maximum number of rides Amber can go on for the rest of her trip.

$3x + 75 \leq 240$
$-75 \quad -75$
$3x \leq 165$
$x \leq 55$

2. What is the minimum times Mark will have to score in order to buy the shoes?

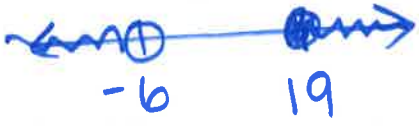
$2x + 5 \geq 108$
$-5 \quad -5$
$2x \geq 103$
$x \geq 51.5$

So 52 times

Part 5: Solve the compound inequalities. Then graph your solution on a number line.

1. $2x - 12 \geq 26$ or $-6x + 1 > 37$

$+12 \quad +12$ $\quad -1 \quad -1$
$2x \geq 38$ $\quad -6x > 36$
$\frac{}{-6} \quad \frac{}{-6}$
$x \geq 19$ or $x < -6$




2. $\frac{85}{17} \leq \frac{17m}{17} \leq \frac{272}{17}$

$5 \leq m \leq 16$

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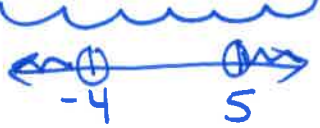
# CHAPTER 2-Review Sheet

**Part 6: Which compound inequality has no solution? Explain why!**

a. $x < 5$ and $x < -2$


b. $X > 5$ and $x < -4$




c. $x > 5$ or $x < -4$ ✓

d. $X < 5$ or $x < -2$ ✓

**Part 7: Evaluate each absolute value.**

1. $|4-9| - |2(-5)| =$

$|-5| - |-10| =$

$5 - 10 = -5$

2. $\frac{|8-18|}{-2} =$

$\frac{10}{-2} = -5$

3. $\frac{-5|1-4| + |3(-9)|}{-6} =$

$\frac{-5(3) + 27}{-6} = \frac{12}{-6} = -2$

**Part 8: Solve each absolute value equation.**

1. $|-x + 18| = 7$

| POS | NEG |
|---|---|
| $(-x+18) = 7$ | $-(-x+18) = 7$ |
| $-18 \quad -18$ | $x - 18 = 7$ |
| $-x = -11$ | $+18 = +18$ |
| $x = 11$ | $x = 25$ |

OR

2. $-7|x - 4| - 20 = 29$

$+20 \quad +20$

$\frac{-7|x-4|}{-7} = \frac{49}{-7}$

$|x-4| = -7$

No Solution

Part 9: Solve each absolute inequality and graph the solution. Remember AND or OR!

1. $\frac{2|x - 13|}{2} < \frac{16}{2}$

$|x-13| < 8$

$+13 \quad +13$

$x < 21$


| | |
|---|---|
| $x < 21$ | $-(x-13) < 8$ |
| | $-x + 13 < 8$ |
| and | $-13 \quad -13$ |
| | $\frac{-x}{-1} < \frac{-5}{-1}$ |
| | $x > 5$ |

2. $|x + 17| > -9$

| | |
|---|---|
| $x + 17 > -9$ | $-(x+17) > -9$ |
| $-17 \quad -17$ | $-1 \quad -1$ |
| $x > -26$ | $(x+17) < 9$ |
| OR | $-17 \quad -17$ |
| | $x < -8$ |

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## CHAPTER 2-Review Sheet

**Part 10: Read the scenario and answer the following:**

Garrett bought gasoline for $2.88 per gallon. He also bought some windshield wiper solvent and oil for his car, which totaled $9.63.

The function f(x) = 2.88x + 9.63 can be used to model this scenario.

1. What does the 2.88 represent in terms of the problem situation?
   cost per gallon of gas
2. What does 2.88x represent in terms of the problem situation?
   how much ~~of~~ $ was spent on gas only
3. What does the 9.63 represent in terms of the problem situation?
   how much was spent on oil + fluid
4. What does each x represent?
   # gallons of gas
5. What does f(x) represent in terms of the problem situation?
   amount of $
6. How much would Garrett spend if he bought $12 gallons of gas?

   $2.88(12) + 9.63 = \$44.19$

7. How many gallons of gas would Garrett get if he spent exactly $32.67

$32.67 = 2.88x + 9.63$
$-9.63 \qquad -9.63$
$23.04 = 2.88x$
$x = 8$

**Part 11: Use the ordered pairs to find the rate of change.**

1. (-4, 12) and ( 6, 10)

$$\frac{10-12}{6-(-4)} = \frac{-2}{10} = \frac{-1}{5}$$

2. (3, -9) and ( -5, 1)

$$\frac{1+9}{-5+3} = \frac{10}{-8} = -\frac{5}{4}$$