

# Packet #01 - Algebra 1

## Graphing Linear Equations

NOTES

ALGEBRA

Write your questions here!



### SLOPE INTERCEPT FORM

$$y = mx + b$$

$\uparrow$  Slope                       $\uparrow$  y-intercept

\* Need extra help?

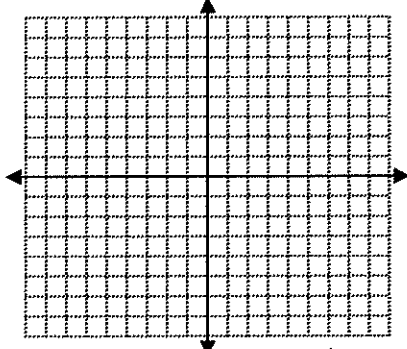
www.flippedmath.com  
for videos, instructional help, & much more.  
Or, e-mail  
Stephanie.ruszkowski@rschool.net

How to graph a line given an equation:

GRAPH

①

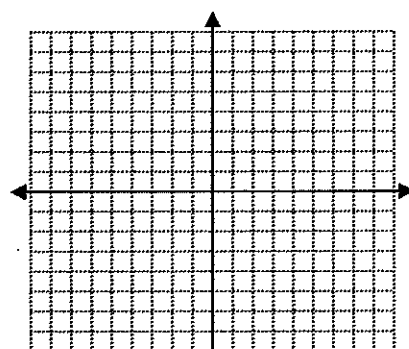
$$y = \frac{1}{3}x - 4$$



Slope =                      y-intercept =

②

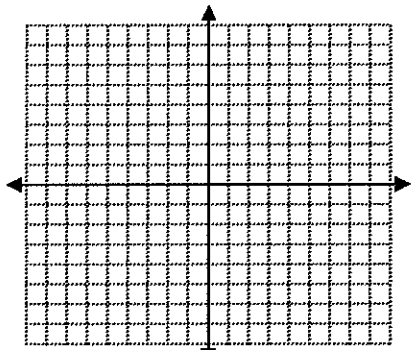
$$y = 2x + 4$$



Slope =                      y-intercept =

③

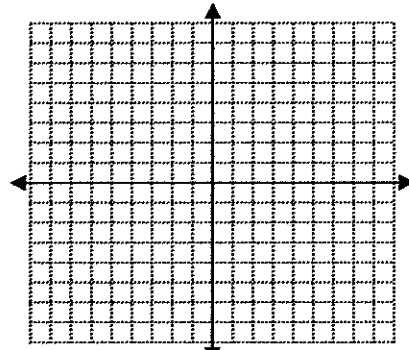
$$y = 2x - 3$$



m =                      b =

④

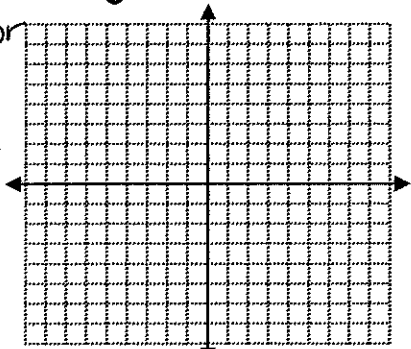
$$y = -\frac{1}{2}x - 1$$



m =                      b =

⑤

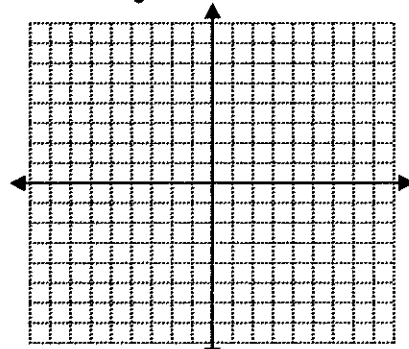
$$y = x$$



m =                      b =

⑥

$$y = 7x - 1$$



m =                      b =

- ① Put in slope-intercept form.  
 $y = mx + b$
- ② Identify slope and y-intercept

③ Plot y-intercept (0, b)

④ Use slope to  
Rise  
run.

Rise up numerator  
& Run Right denominator  
value if positive.  
Run Left denominator  
value if negative.

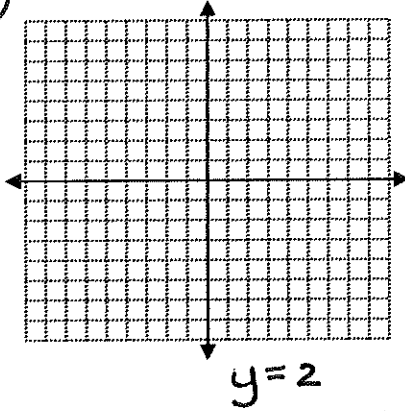
\* Don't forget

$$\text{Slope} = m = \frac{\text{rise}}{\text{run}} = \frac{y}{x}$$

**SPECIAL SLOPES**

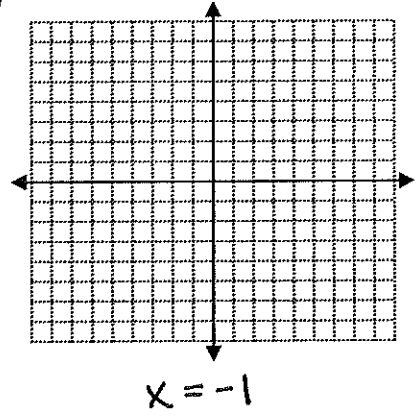
Horizontal Lines  
 $m = 0$

7



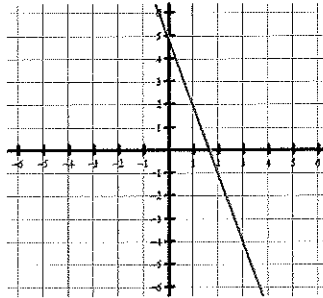
Vertical lines  
 $m = \text{undefined}$

8

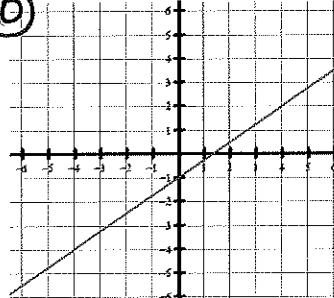


Write the equation of the line.

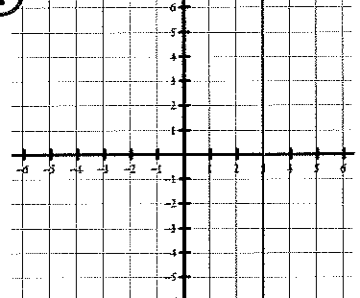
9



10



11



**PUTTING IT ALL TOGETHER**

VERBAL: Bob has 3 cakes. He bakes 5 cakes every 2 hours.

EQUATION:  $y = \frac{5}{2}x + 3$   
y-intercept      slope

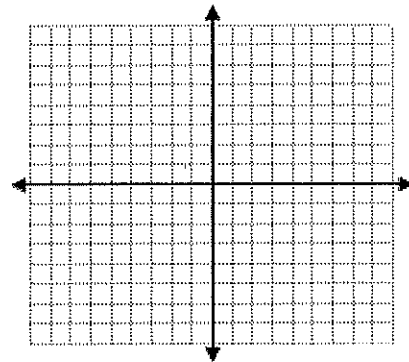
TABLE:

12

x	y
0	
4	
-6	
	23

GRAPH:

13



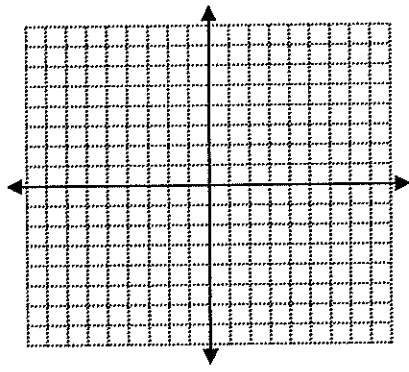
Now, summarize your notes here!

# 0.3 Graphing Linear Equations

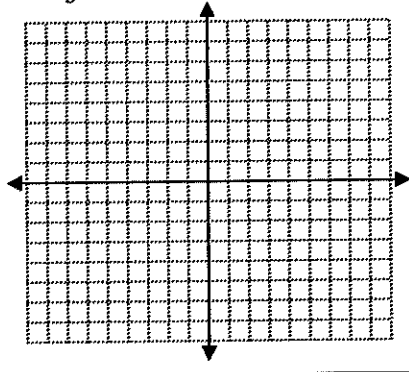
## PRACTICE

Graph the following lines.

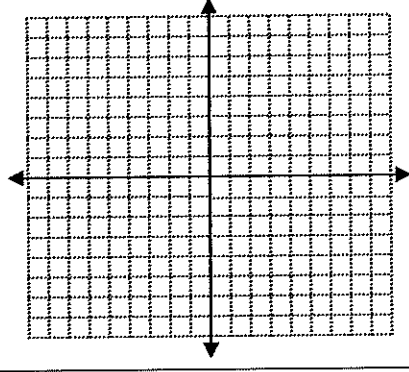
1.  $y = 2x + 1$



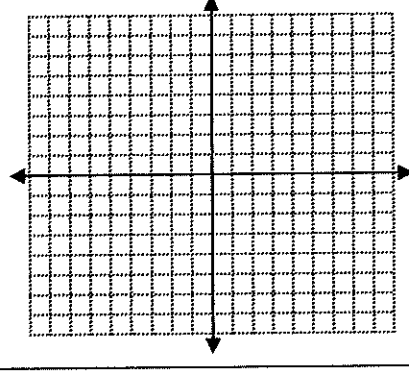
2.  $y = \frac{1}{3}x - 4$



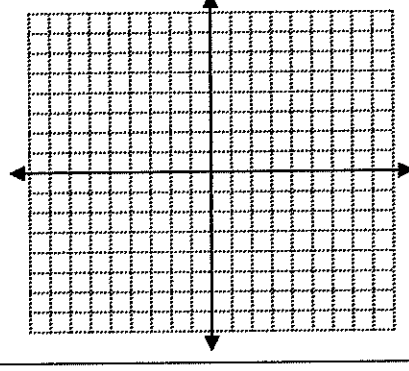
3.  $y = -\frac{2}{3}x + 4$



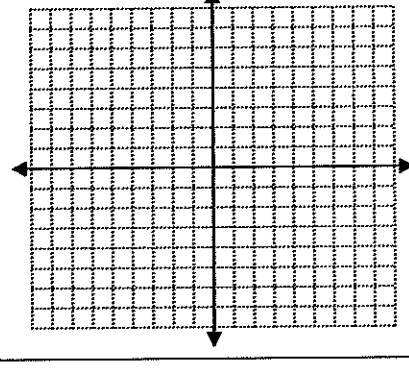
4.  $y = \frac{1}{5}x - 3$



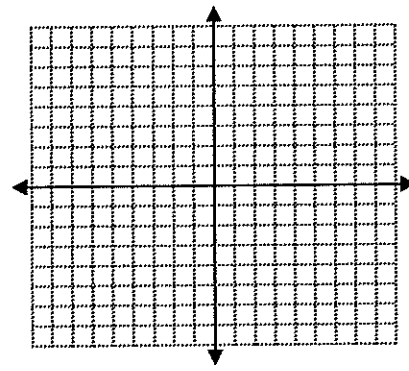
5.  $y = x + 3$



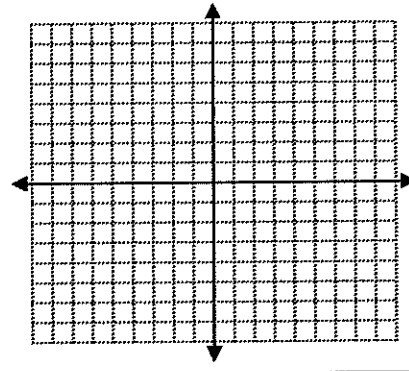
6.  $y = 4$



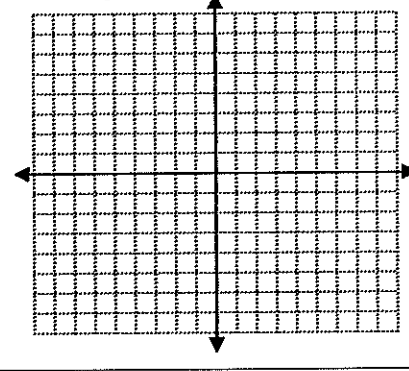
7.  $y = 3x + 7$



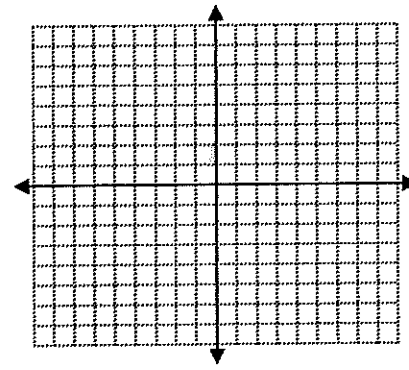
8.  $y = 4 - 2x$



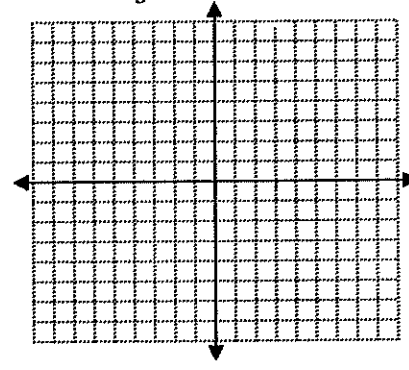
9.  $y = -\frac{3}{4}x + 2$



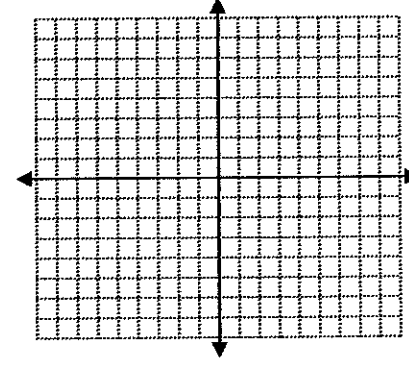
10.  $x = -5$



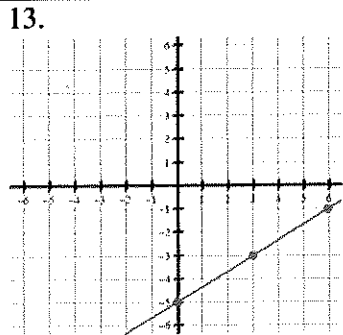
11.  $y = 3 + \frac{2}{5}x$



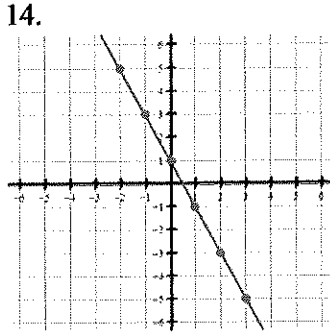
12.  $y = 2x$



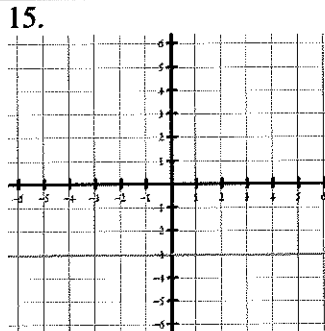
Write the equation of the line graphed below.



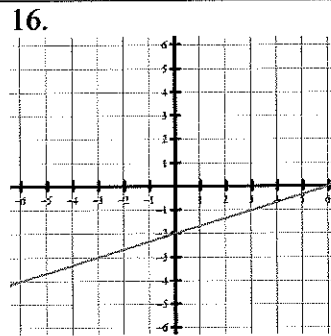
$y =$  \_\_\_\_\_



$y =$  \_\_\_\_\_



\_\_\_\_\_

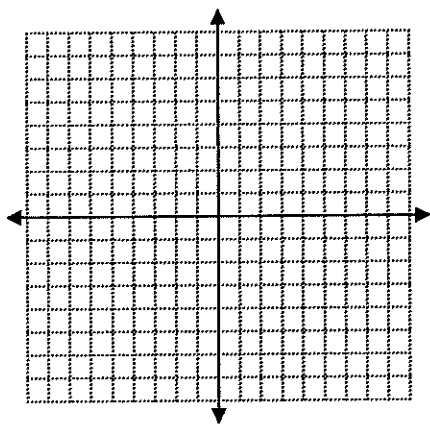


$y =$  \_\_\_\_\_

Use the equation to complete the table and graph the line.

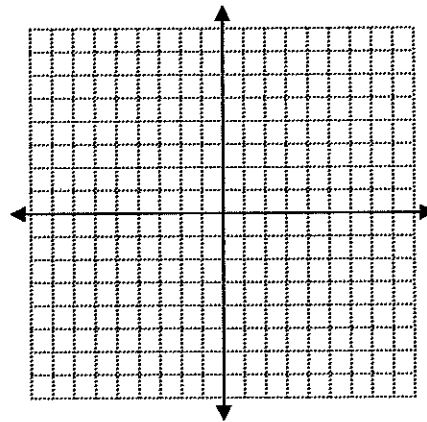
17.  $y = \frac{1}{2}x - 3$

x	y
0	
4	
-6	
	3



18.  $y = -3x + 7$

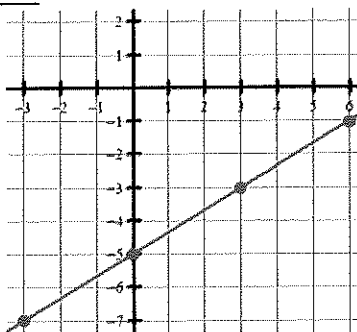
x	y
1	
0	
4	
	-8



Use the graph to complete the table and write the equation.

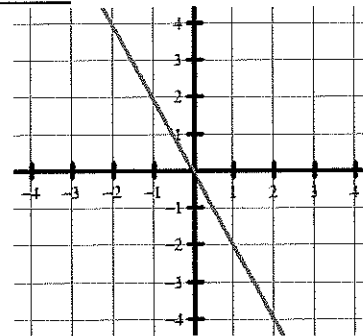
19.  $y =$  \_\_\_\_\_

x	y
3	
0	
	-1
-6	



20.  $y =$  \_\_\_\_\_

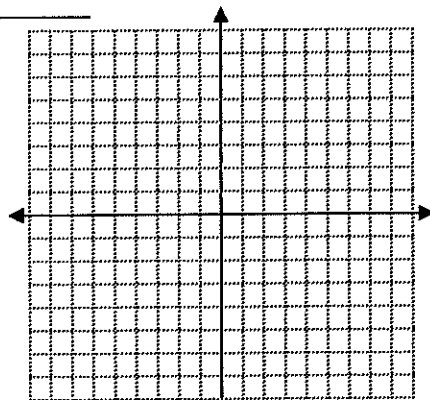
x	y
1	
-2	
0	
	-4



Use the table to complete the graph and write the equation.

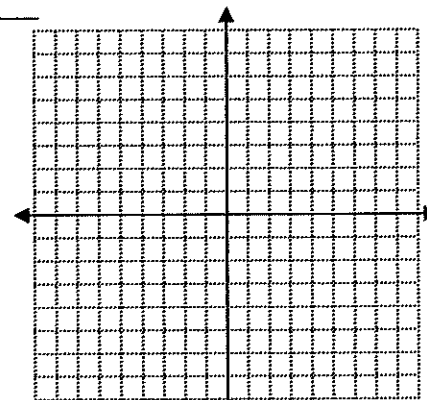
21.  $y =$  \_\_\_\_\_

x	y
-3	0
0	2
6	6
-9	-4



22. \_\_\_\_\_

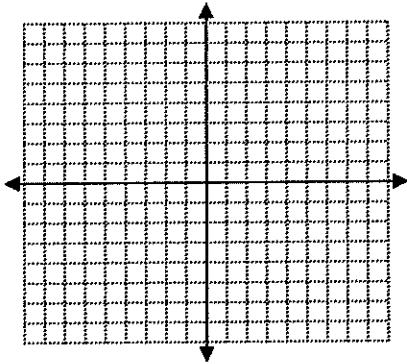
x	y
4	-2
4	4
4	-5
4	3



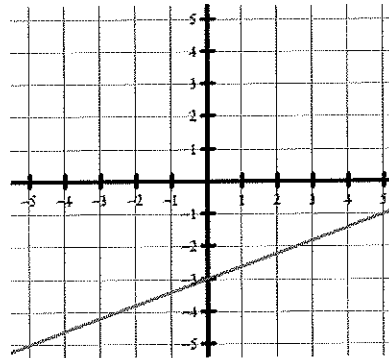
### 0.3 Graphing Linear Equations

## WRAP UP

1. Graph the line  $y = -\frac{2}{3}x - 1$

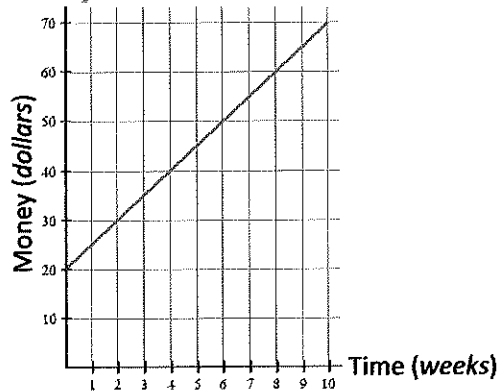


2. Write the equation of the line graphed below.



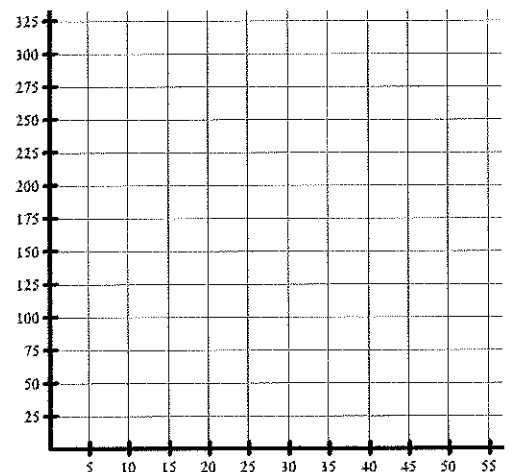
3. **MULTIPLE CHOICE** Which of the following equations represents the line shown below where  $t$  stands for time in weeks and  $m$  stands for money in dollars?

- (A)  $m = \frac{1}{2}t + 2$
- (B)  $m = 2t + 2$
- (C)  $m = 5t + 20$
- (D)  $m = \frac{1}{2}t + 20$
- (E)  $m = 2t + 20$



4. **FREE RESPONSE** Mr. Kelly has a super-sized bag of AlgeGummy Bears. He sits down to watch Riverdale with the bag which has 300 AlgeGummies in it. Mr. Kelly eats 20 AlgeGummies every 3 minutes while he watches the antics of his favorite character Jughead.

- a) Write an equation to model the number of AlgeGummies in his super-sized bag. Define your variables.
- b) Graph your equation. Label both axes.
- c) How long will it take for his bag to have 160 AlgeGummies left?
- d) How many AlgeGummies will be in the bag after 4 minutes?



- e) What is a value for the number of AlgeGummies that you could put into your equation that wouldn't make sense for this situation? Why does it not make sense in this situation?

# Packet # 02 - Algebra I

## Finding Slope Given a Table or a Graph

The **slope** of a line is determined by the ratio  $\frac{\text{change in } y}{\text{change in } x}$  between any two points that lie on the line.

The slope is the **constant rate of change** of a line.

### EXAMPLE A

Use a graph to determine the slope of a line.

*Step 1: Identify two points on the line.*

In this case, use (0, 2) and (2, 1).

*Step 2: Calculate the vertical change from one point to the next.*

In this case, you must count down 1 space to move from the point (0, 2) to the point (2, 1).

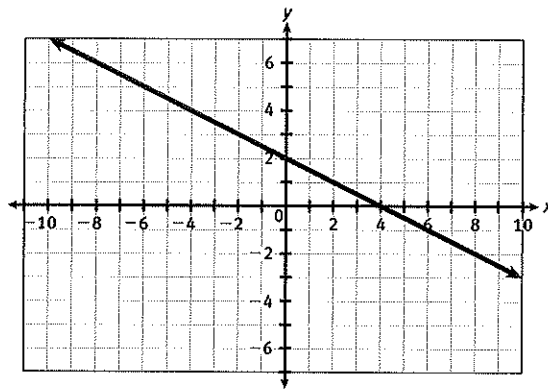
*Step 3: Calculate the horizontal change from one point to the next.*

In this case, you must count right 2 spaces to move from the point (0, 2) to the point (2, 1).

*Step 4: Write the ratio showing  $\frac{\text{vertical change}}{\text{horizontal change}}$  in simplest form.*

In this case, the slope is represented by the ratio  $\frac{-1}{2}$ , or  $-\frac{1}{2}$ .

*Solution:* The slope is negative because the line falls from left to right.



### GUIDED PRACTICE

The ratio of vertical change to horizontal change is the same between any two points on a line.

Use two different points on the line above to show this is true.

### EXAMPLE B

Use a table to determine the slope of a line.

*Step 1: Identify the change in each consecutive pair of y-values in the table.* In this case, the changes are 5, 5 and 10.

*Step 2: Identify the change in each consecutive pair of x-values in the table.* In this case, the changes are 1, 1, and 2.

*Step 3: Write ratios showing the corresponding  $\frac{\text{vertical change}}{\text{horizontal change}}$  in simplest form.* In this case, the ratios  $\frac{5}{1}$ ,  $\frac{5}{1}$ , and  $\frac{10}{2}$  each simplify to  $\frac{5}{1}$ .

The slope of the line is  $\frac{5}{1}$ .

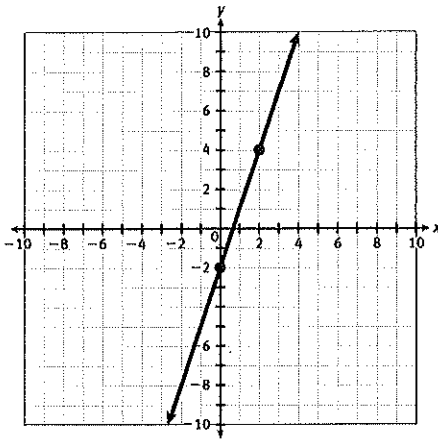
	x	y	
1	1	-3	5
1	2	2	5
2	3	7	10
	5	17	

Finding Slope Given a Table or a Graph (continued)

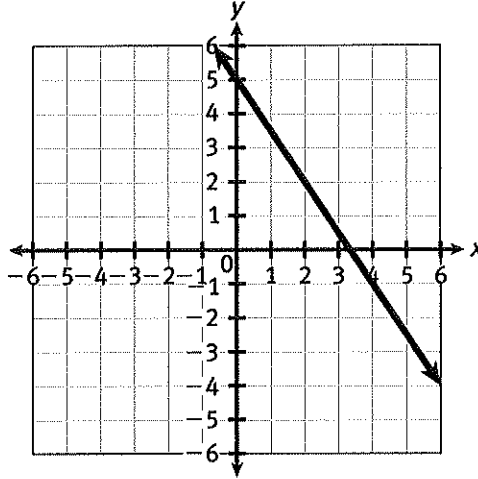
PRACTICE

Determine the slope for each of the following.

1.



2.



3.

$x$	$y$
5	5
7	3
9	1
11	-1

4.

$x$	$y$
2	-5
4	6
7	20
11	40

# Finding Slope from Tables

Name \_\_\_\_\_

Date \_\_\_\_\_ Period \_\_\_\_\_

## Homework

Determine the slope, y-intercept, and equation of the line represented by the table of values.

1.

x	y
-2	3
-1	5
0	7
1	9
2	11

m =

b =

equation =

2.

x	y
-3	5
-2	2
-1	-1
0	-4
1	-7

m =

b =

equation =

3.

x	y
1	-17
2	-13
3	-9
4	-5
5	-1

m =

b =

equation =

4.

x	y
-6	-4
-5	-9
-4	-14
-3	-19
-2	-24

m =

b =

equation =

5.

x	y
0	3
1	5.5
2	8
3	10.5
4	13

m =

b =

equation =

6.

x	y
-2	5
-1	4.75
0	4.5
1	4.25
2	4

m =

b =

equation =

7.

x	y
-2	2
	5
-1	4
	5
0	6
	5
1	8
	5

m =

b =

equation =

8.

x	y
-1	1
1	2
3	3
5	4
7	5

m =

b =

equation =

9.

x	y
-2	10
0	5
2	0
4	-5
6	-10

m =

b =

equation =

10.

x	y
-5	10
-3	6
-1	2
1	-2
3	-6

m =

b =

equation =

11.

x	y
-4	6
-2	6
0	6
2	6
4	6

m =

b =

equation =

12.

x	y
5	2
5	4
5	6
5	8
5	10

m =

b =

equation =



Name: \_\_\_\_\_

Date: \_\_\_\_\_

Period: \_\_\_\_\_

Algebra 1

## Assignment 12: Slope from Two Points and Tables

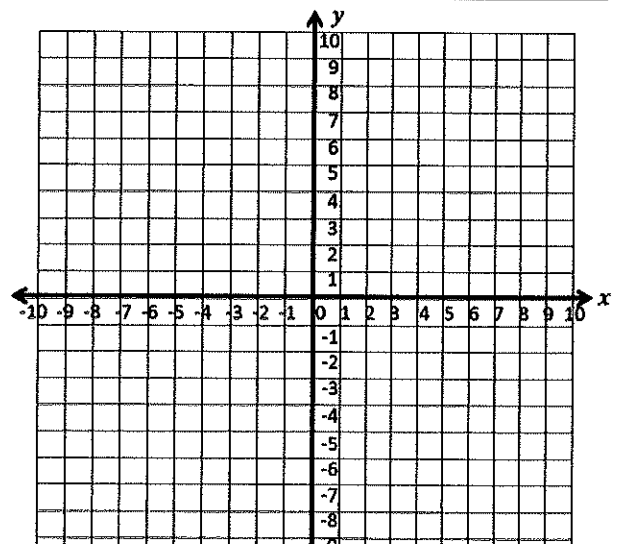
**Directions:** Find the slope of the line that passes through each pair of points. Simplify all answers, and leave answers as fractions not decimals if needed.

*There is a graph at the bottom of the page if you need it.*

The Slope Formula:  $m = \frac{y_2 - y_1}{x_2 - x_1}$

<p>1. (4, 3) and (8, 6)</p> <p>Slope:</p>	<p>2. (1, 3) and (7, 5)</p> <p>Rate of Change:</p>	<p>3. (-1, -2) and (2, 7)</p> <p><math>\frac{\text{change in } y}{\text{change in } x}</math></p>
<p>4. (3, -2) and (5, -2)</p> <p><math>m =</math></p>	<p>5. (2, -3) and (0, -2)</p> <p>Slope:</p>	<p>6. (-5, 2) and (1, -2)</p> <p><math>\frac{\text{rise}}{\text{run}}</math></p>
<p>7. (0, 4) and (4, 0)</p> <p>Rate of Change:</p>	<p>8. (9, -5) and (9, 1)</p> <p><math>m =</math></p>	<p>9. (4, 10) and (-2, -5)</p> <p>Slope:</p>

10. Find the slope of the line that passes through the following points: (2, 1), (-1, -5), and (3, 3)



11. The slope of the line that passes through the points (-2, y) and (-5, 7) is  $-\frac{2}{3}$ . What is the value of y?

# Packet # 03 - Algebra 1

## Slope (Rate of Change)

### NOTES

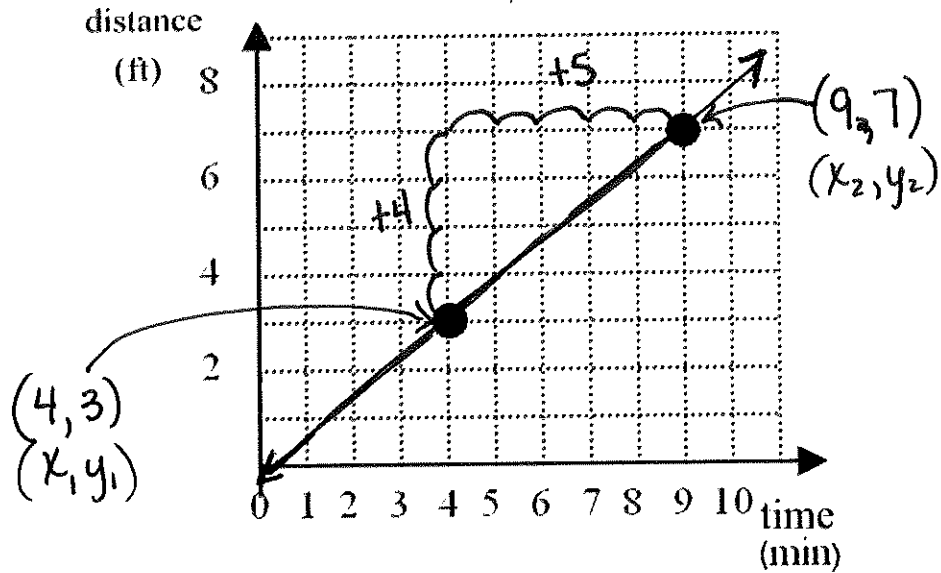
#### ALGEBRA

Write your questions here!



Recall:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$



**SLOPE**  $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - 3}{9 - 4} = \frac{4}{5}$  rise  
run

#### POINTS

① (12, 16) and (-20, 4)

Find the slope:



$m =$

Determine the slope:

②

x	y
0	3
1	7
2	11
3	15
4	19

$m =$

③

x	y
-2	22
1	17
4	12
7	7
10	2

$m =$

④

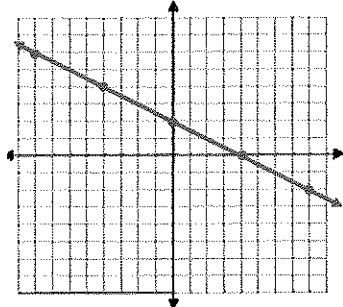
x	y
-8	6
4	12
14	17

$m =$

**Find the Slope!**

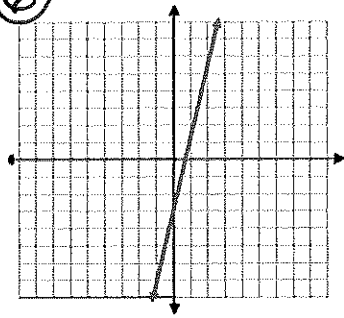
**EQUATIONS**

5 GRAPH



$m =$

6



$m =$

7 VERBAL

Bob has 40 skittles. He eats 5 skittles every 3 minutes.

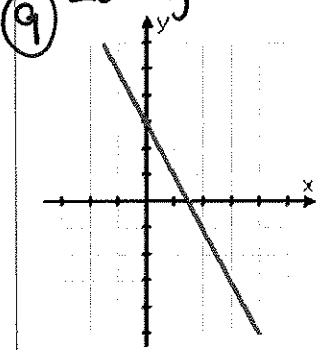
$m =$

8

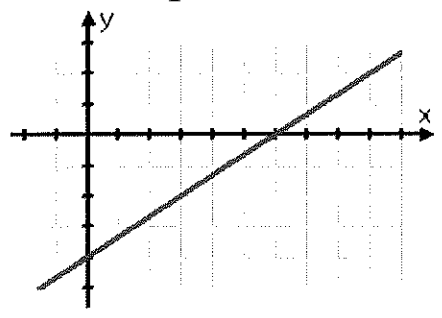
Sarah runs 3 miles every 24 minutes. She has already 5 miles.

$m =$

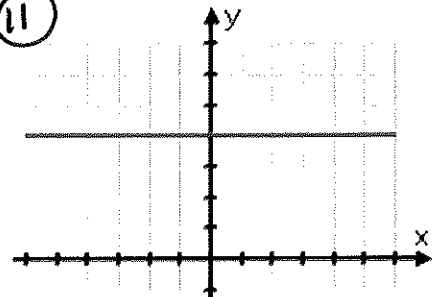
9 Identify Positive, Negative, Zero, and Undefined Slope



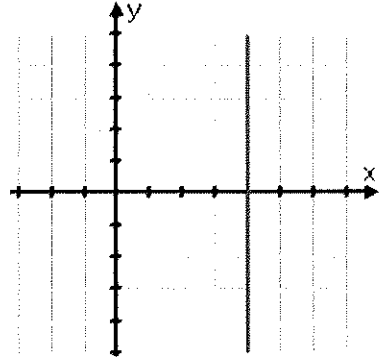
10



11



12



**SUMMARY:**

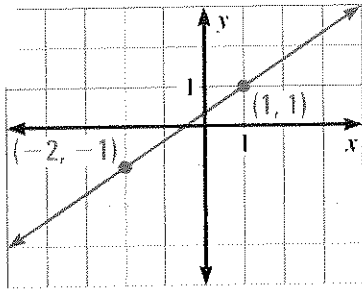
Now, summarize your notes

**PRACTICE**

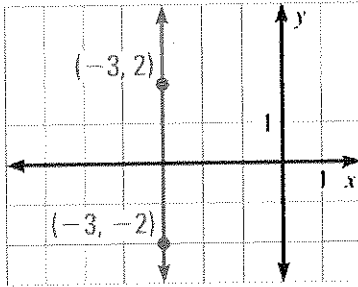
5.3 Slope (Rate of Change)

Tell whether the slope of the line is positive, negative, zero or undefined. Then find the slope if it exists.

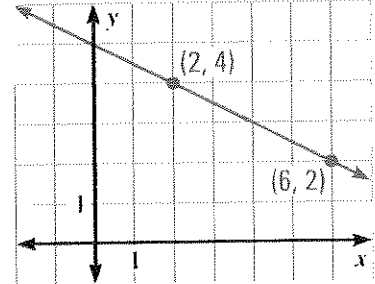
1.



2.

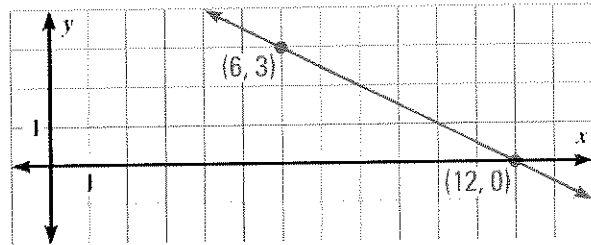


3.



4. **ERROR ANALYSIS** Describe and correct the error in calculating the slope of the line shown.

$$m = \frac{12 - 6}{0 - 3} = \frac{6}{-3} = -2$$



Find the slope of the line that passes through the points.

5. (-2, -1) and (4, 5)

6. (1, 3) and (3, -2)

7. (1, -3) and (7, 3)

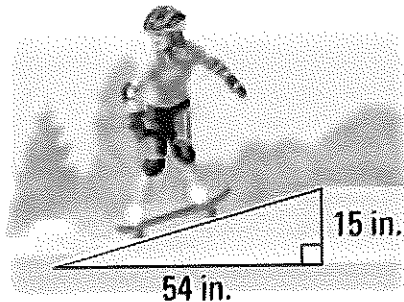
8. (-9, 1) and (1, 1)

9. **★ MULTIPLE CHOICE** The slope of the line that passes through the points (-2, -3) and (8, -3) is ?.

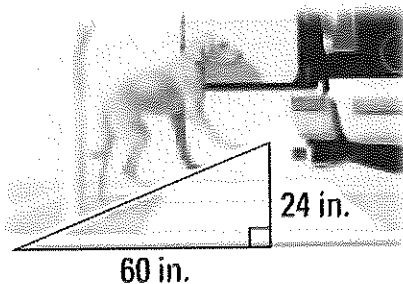
(A) positive      (B) negative      (C) zero      (D) undefined

Find the slope of the object.

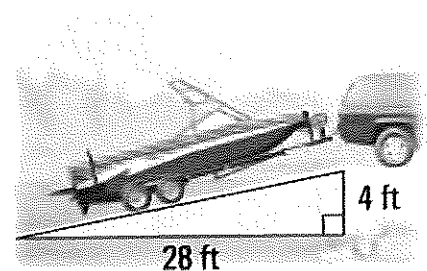
10. Skateboard ramp



11. Pet ramp



12. Boat ramp





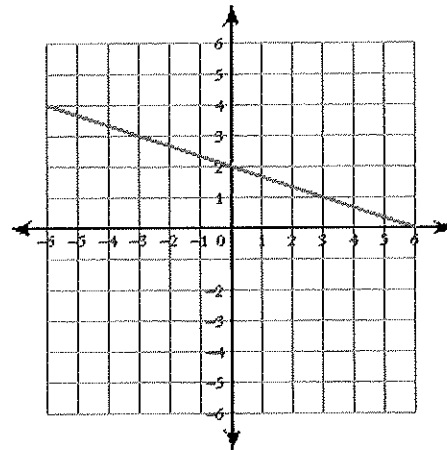
5.3 Slope (Rate of Change)

APPLICATION

Find the slope of the following:

1.  $(-5, -7)$  and  $(14, -24)$

2.



Find the slope (rate of change) of the following and label your answer (like miles per hour)

3.

Time (seconds)	Profit (dollars)
3	18
5	25
7	32

$m =$

4.

Time (days)	Weight (grams)
-3	40
1	32
5	24

$m =$

5.

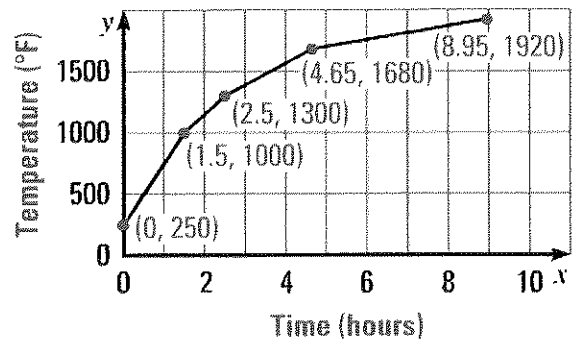
Age (years)	Height (cm)
5	80
15	120
20	140

$m =$

6. Firing a piece of pottery in a kiln takes place at different temperature for different amounts of time. The graph shows the temperature in a kiln while firing a piece of pottery (note: oven was preheated)

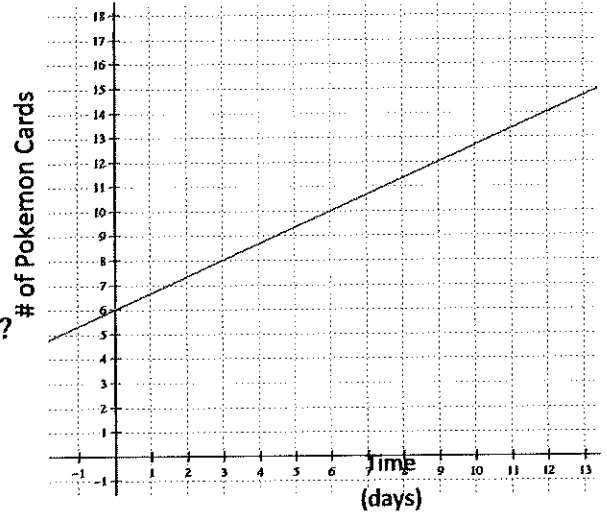
a. Determine the time interval during which the temperature in the kiln showed the greatest rate of change.

b. Determine the time interval during which the temperature in the kiln showed the least rate of change.



**Brust, Sully, and Kelly love to play Pokemon. Answer the following:**

**7. Mr. Brust's Pokémon cards are shown in the graph.**



- a. What is Mr. Brust's slope?
- b. What does his slope mean?  
(AKA describe his rate of change in sentence using labels.)
- c. How many cards does Mr. Brust have after 9 days?
- d. When will Mr. Brust have 12 cards?
- e. What is Mr. Brust y-intercept?

**8. Mr. Sullivan's Pokémon cards are shown in the table.**

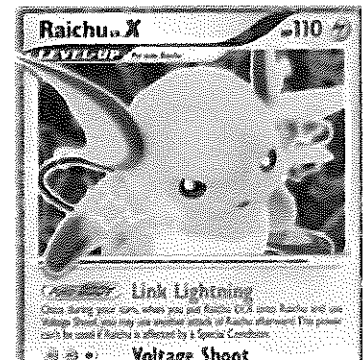
- a. What is Mr. Sullivan's slope?
- b. What does his slope mean?  
(AKA describe his rate of change in sentence using labels.)
- c. What is Mr. Sullivan y-intercept?
- d. What does Mr. Sullivan y-intercept mean in this problem?

Time (days)	Cards #
0	20
2	16
4	12
6	8
8	4

**9. Mr. Kelly's Pokémon cards are determined by the equation.**

- a. What is Mr. Kelly's slope?
- b. What does his slope mean?  
(AKA describe his rate of change in sentence using labels.)
- c. How many cards will Mr. Kelly have in 40 days? **SHOW WORK!**
- d. When will Mr. Kelly have 8 cards? **SHOW WORK!**

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



**10. Look back at the Pokémon questions 7-9. Who is the best player? Explain why. Who is the worst player? Explain why**

# Packet #4 - Algebra 1

Algebra 1

Name: \_\_\_\_\_

## Unit Conversion Worksheet

### Conversions

1 hour = 3600 seconds

1 meter = 3.28 feet

1 kg = 2.2 lbs

1 m/s = 2.2 miles/hour

1 mile = 5280 feet

1 km = 0.62 miles

1 lb = 0.45 kg

1 foot = 12 inches

1 yard = 3 feet

1 light second = 300,000,000 meters

1 quart = 0.946 liters

1 inch = 2.54 cm = 25.4 mm

**Convert the following quantities.**

① 565,900 seconds into days

② 17 years into minutes

③ 43 miles into feet

④ 165 pounds into kilograms

⑤ 100 yards into meters

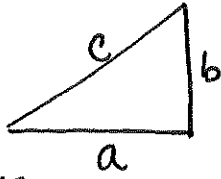
⑥ 22,647 inches into miles

⑦ 2678 cm into feet



- 8 60 miles per hour into meters per second
- 9 130 meters per second into miles per hour
- 10 1100 feet per second into miles per hour
- 11 53 yards per hour into inches per week
- 12 721 lbs per week into kg per second
- 13 88 inches per second into miles per day
- 14 12080 gallons per month into liters per hour
- 15 27 miles per gallon into kilometers per liter
- 16 186,282 miles per second into meters per second

$$a^2 + b^2 = c^2$$



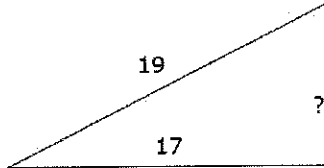
NAME: \_\_\_\_\_

$c = \text{hypotenuse}$

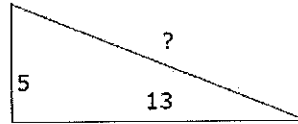
## PYTHAGOREAN THEOREM - WORKSHEET

For each triangle find the missing length. Round your answer to the nearest tenth. Then find the area and the perimeter.

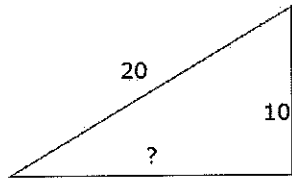
1.



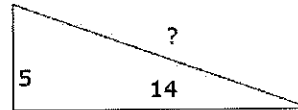
2.



3.



4.



For #5-9  $c$  is the hypotenuse of the right triangle ABC with sides  $a$ ,  $b$ ,  $c$

5.  $a = 12$ ;  $b = 5$ ;  $c =$  \_\_\_\_\_

6.  $a = 8$ ;  $b =$  \_\_\_\_\_;  $c = 10$

7.  $a = 15$ ;  $b =$  \_\_\_\_\_;  $c = 17$

8.  $a =$  \_\_\_\_\_;  $b = 40$ ;  $c = 50$

9.  $a =$  \_\_\_\_\_;  $b = 2$ ;  $c = 4$

10. Find a third number so that the three numbers form a right triangle:

i) 9 , 41

ii) 13 , 85

11. Ms. Green tells you that a right triangle has a hypotenuse of 13 and a leg of 5. She asks you to find the other leg of the triangle. What is your answer?

12. Two joggers run 8 miles north and then 5 miles west. What is the shortest distance, to the *nearest tenth* of a mile, they must travel to return to their starting point?

13. Oscar's dog house is shaped like a tent. The slanted sides are both 5 feet long and the bottom of the house is 6 feet across. What is the height of his dog house, in feet, at its tallest point?

14. To get from point A to point B you must avoid walking through a pond. To avoid the pond, you must walk 34 meters south and 41 meters east. To the *nearest meter*, how many meters would be saved if it were possible to walk through the pond?

15. A suitcase measures 24 inches long and the diagonal is 30 inches long. How much material is needed to cover one side of the suitcase?

# Packet #05 - Algebra I

## Solving Simple Equations

### ALGEBRA

Write your questions here!

How to complete a packet:		
1. Take Notes	2. Practice and Check	3. Application
<ul style="list-style-type: none"> <li>✓ Use Headphones</li> <li>✓ Other distractions away</li> <li>✓ Write questions in the margin</li> </ul>	<ul style="list-style-type: none"> <li>✓ Check answers as you go</li> <li>✓ Look for mistakes in steps</li> <li>✓ Circle Problems</li> </ul>	<ul style="list-style-type: none"> <li>✓ Apply what you've learned</li> <li>✓ Think Differently</li> <li>✓ Have Grit</li> </ul>

### Review:

To solve equations with two or more steps, apply the inverse operations in the reverse order.

### Inverse Operations

Operation	Inverse Operation
Addition +	Subtraction -
Subtraction -	Addition +
Multiplication *	Division ÷
Division ÷	Multiplication *

Solve the following equations for the unknown variable:

Operation Performed on x	Operations to Isolate x
Divide by 2	Multiply by 2
Add 3	Subtract 3

$$\frac{x}{2} + 3 = 19$$

1.  $\frac{f + 2.5}{3} = 2$

2.  $16r - 12 = -4$

3.  $2j - 4j + 10 = 12$

4.  $5 = \frac{1}{3}x - 10$

5.  $12 = -\frac{d}{5}$

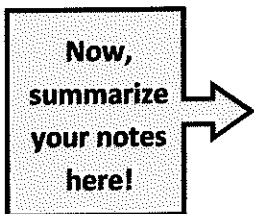
6.  $\frac{1}{5} = 3 - \frac{x}{3}$

You try!

7.  $\frac{1}{2} = \frac{x-4}{8}$

8.  $1 - 4y - 9y = 14$

### SUMMARY:



### 0.1 Solving Simple Equations

Directions: Solve for the unknown variable. Show your work as it was described in the video.

1.  $15 = 2x - 10$

2.  $15 + 2x = -10$

3.  $80 = \frac{w}{6}$

4.  $\frac{g+2}{6} = 8.5$

5.  $\frac{g}{6} + 2 = 8.5$

6.  $d - 5 = 15$

7.  $3k - 6 = 12$

8.  $6h - 3 = 57$

9.  $-5 - \frac{g}{6} = 15$

10.  $3 = \frac{q-12}{4}$

11.  $-42 = 6 - 8h$

12.  $9.9 = \frac{d}{4.4} + 1.1$

13.  $-\frac{p}{6} = 4$

14.  $0.8 - t = 4.1$

15.  $32 = 12z - 26z$

16.  $-9 = \frac{3d}{0.8}$

17.  $5g - 10 + 3g = 0$

18.  $42 = \frac{d}{0.1} - 5$

## 0.1 Solving Simple Equations

Directions: Solve for the unknown variable. Show your work as it was described in the video.

1.  $-6 = 4p - 10$       2.  $15 - 2d = 11$       3.  $2 = \frac{k+2}{2.5}$

4.  $\frac{y+2}{6} = 1$       5.  $\frac{h}{5} + 2 = 6$       6.  $-3r - 5 = -23$

7.  $3k - 6 = -27$       8.  $h - 3h = -16$       9.  $-5 - \frac{r}{3} = -8$

10.  $3 = \frac{a+1}{5}$       11.  $6 = 6 - 8h$       12.  $9.9 = \frac{d}{4.4} + 1.1$

UNIT 2 Real Numbers

NAME: \_\_\_\_\_

**REVIEW**

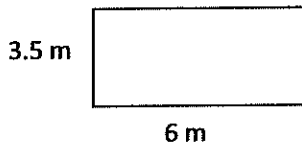
DATE: \_\_\_\_\_

<b>Circle the number set or number sets in which the number lies.</b>											
1. -17 Whole Integer Rational Irrational	2. $\sqrt{13}$ Whole Integer Rational Irrational	3. $\frac{25}{7}$ Whole Integer Rational Irrational									
<b>Put in order from least to greatest.</b>											
4. $ -5 , 4.9, \frac{26}{5}, 5\frac{1}{10}$			5. $-3, -\frac{10}{3}, -3.25, -3\frac{2}{5}$								
<b>Evaluate each expression. Reduce fractions when possible. Leave as improper fractions.</b>											
6. $-4 + (-5)$	7. $4.5 - (-5.2)$	8. $-\frac{3}{4}(-5)$									
9. $\frac{2}{9} \div (-\frac{7}{5})$	10. $4\frac{2}{3} + (-5)$	11. $-4(-5)$									
12. $\sqrt{\frac{45}{5}}$	13. $ \frac{3}{5} + (-\frac{5}{6}) $	14. $-2 \div \frac{3}{4}$									
<b>Circle the correct property.</b>											
15. $4(x + 2) = 4x + 8$	<table border="0" style="width: 100%; text-align: center;"> <tr> <td>Commutative Property of Addition</td> <td>Associative Property of Addition</td> <td>Commutative Property of Multiplication</td> <td>Associative Property of Multiplication</td> <td>Distributive Property</td> <td>None</td> </tr> </table>					Commutative Property of Addition	Associative Property of Addition	Commutative Property of Multiplication	Associative Property of Multiplication	Distributive Property	None
Commutative Property of Addition	Associative Property of Addition	Commutative Property of Multiplication	Associative Property of Multiplication	Distributive Property	None						
<b>Simplify each expression.</b>											
16. $6(3y - 5)$	17. $(4m - 1)2 + 8$	18. $6r + 2(r + 4)$									
19. $3h - 14 - h + 10$	20. $7(w - 5) + 3(3 + 2w)$	21. $-(2s - 3) + 17s$									



### APPLICATION!

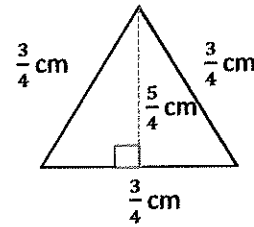
22. Find the area and perimeter of the rectangle.  
 $p = \text{add up all the sides}$      $A = lw$



Perimeter =

Area =

23. Find the area and perimeter of the triangle.  
 $p = \text{add up all the sides}$      $A = \frac{1}{2}bh$



Perimeter =

Area =

24. Given the set of numbers in the domain below, use the function to find the range.

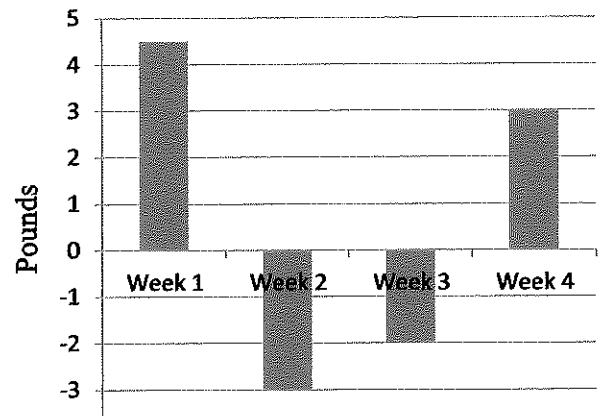
**Domain**  $\{-2.5, -\frac{3}{4}, 0, 4\}$

**Range**  $\{ \quad \quad \quad \}$

**Function**  $y = 4 + 2x$

### Weight Change

25. Bob records his weight change for a month.  
 What is his total change?



26. Mr. Kelly is reading Martha Stewart's Living magazine one day. He comes across a delicious recipe for refreshing strawberry lemonade. Mr. Kelly only wants to make half the recipe. Change the recipe so that it makes a half of batch of lemonade.

Serves 9	Serves _____
• 1.5 pints of strawberries	_____ pints of strawberries
• $\frac{20}{9}$ teaspoons of sugar	_____ teaspoons of sugar
• 10 tablespoons of lemon juice	_____ tablespoons of lemon juice
• $4\frac{3}{4}$ liters of water	_____ liters of water

# Packet #6 - Algebra 1

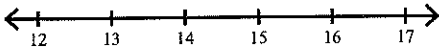
Name \_\_\_\_\_

## Chapter 7 Review

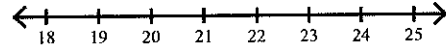
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**Solve each inequality and graph its solution.**

1)  $4 > n - 11$



2)  $-10 - 2b < -50$



**Translate the verbal phrase into an inequality. Then solve the inequality.**

3) The sum of  $5x$  and  $4$  is less than or equal to  $7x$ .

**Solve each inequality.**

4)  $-72 \geq -6(7n + 5)$

5)  $6 - 2a \leq a + 8 - 3a$

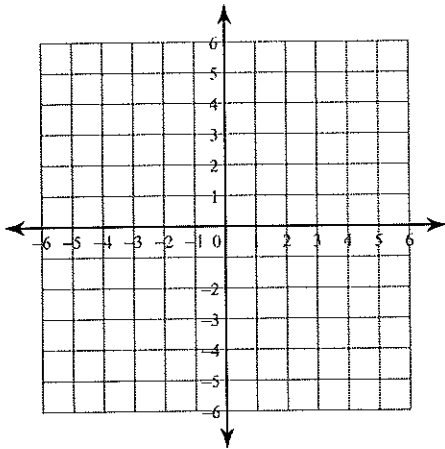
**Solve each equation.**

6)  $|-5 + x| = 15$

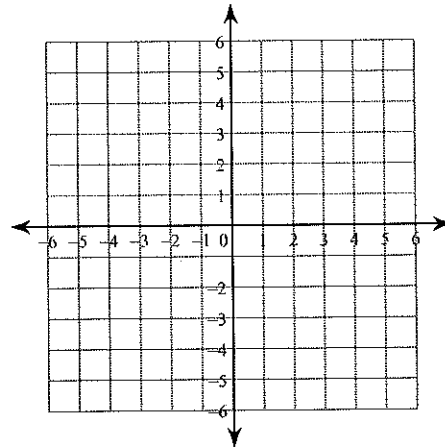
7)  $6|-5 + n| + 9 = 99$

**Sketch the graph of each linear inequality.**

8)  $y < \frac{1}{2}x + 3$



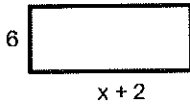
9)  $7x + 3y > -9$



## Chapter 6 Review Applications

Write and solve an inequality to find the possible values of  $x$ .

1)  $\text{area} > 72$



2) Mr. Brust has 3 kids and each year he has 1.5 more kids (on average). He wants to have no more than 18 kids.

Write and solve an inequality for the above situation.

3) Mr. Sullivan is losing...Jeopardy that is. Going into Final Jeopardy he has \$5400. He decides to wager \$5299 on the last question knowing that if he gets it right he wins the money and if he gets it wrong he loses the money.

Write and solve an absolute value equation for the situation.

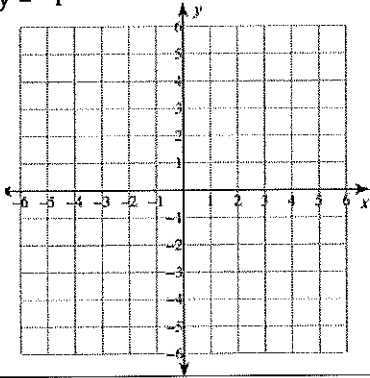
5) Mr. Brust and Mr. Kelly enter the DoDDS celebrity Putt-Putt tournament. Their score is sum of Mr. Brust's score and doubling Mr. Kelly's score. They need to have a combined score of no more than 75 strokes.

- a) Write an inequality with  $x$  representing Mr. Brust's strokes and  $y$  representing Mr. Kelly's strokes.
- b) Would they move on if Mr. Brust shot 20 strokes and Mr. Kelly shot 30 strokes?
- c) How many strokes would Mr. Brust need to shoot if Mr. Kelly shot a 28?

**Skillz Review (1 pt each)**

Graph the line.

1)  $y = -4$



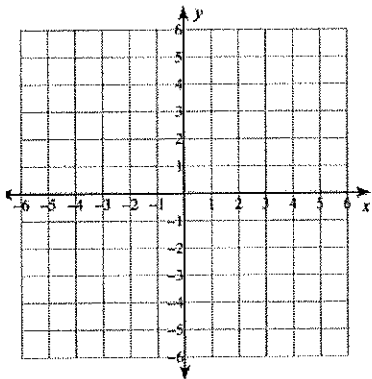
Evaluate.

2)  $a^2 - b^5$ ; when  $a = -5$  and  $b = -1$

Solve.

3)  $5 - 4(1 + 8r) = -127$

4)  $y = \frac{3}{2}x + 3$



5)  $-v^3 - 2v^2$ ; when  $v = 3$

6)  $-8k + 1 = 4 - 8k$

Directions: Solve and graph each inequality. 5 points each.

1)  $60 < 4x$



2)  $p - 1 \geq -16$

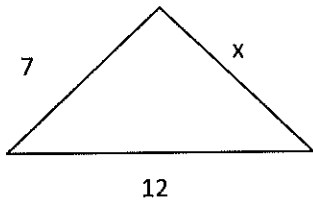
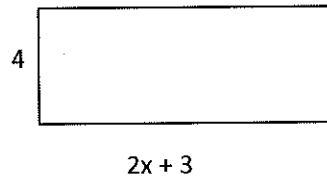


3)  $9.33 \geq p - 7.6$



4)  $1 - 5n - 7n < 1$



**2 POINTS FOR EACH PART!**1) perimeter  $< 25$ 2) area  $< 92$ 

3) Mr. Brust is speed eating spring rolls. He's eaten 8 and continues to eat 4.5 every minute. He needs to eat no less than 44 to tie Mr. Bean's record.

a) Write an inequality for the above situation.

b) Solve your inequality.

4) Mr. Kelly has 33 marbles. Sully bets him that he can't say the alphabet backwards. If Mr. Kelly wins he gets 13 more marbles from Sully. If he loses he has to give 13 marbles to Sully.

a) Write an absolute value equation for the above situation.

b) Solve your equation.

5) Mr. Bean loves DR. PEPPER. He can never decide which size to get when he goes to the store. He can buy a large DR. PEPPER for \$3 and he can buy a regular DR. PEPPER for \$1. He goes in with 63.

- a) Write an inequality with  $x$  representing the number of large DR. PEPPER's and  $y$  representing the number of regular DR. PEPPER's that Mr. Bean can buy.
  
- b) Would he be able to buy 18 large and 20 regular DR. PEPPER's?
  
- c) How many regular DR. PEPPER's would Mr. Bean be able to buy if he bought 13 large Dr. Peppers?
  
- d) Graph the inequality from A.

