Week 12: 11/2-11/6 Math I Due: 11/9

Objectives:

1. To identify and represent patterns that describe nonlinear functions.
2. To graph equations that represent functions.
3. To write equations that represent functions.
4.
5.

Monday:

In Class:
Section 2-3: Notes in composition book
Homework:
Section 2-3: #6-10
Got to text website: www.pearsonsuccessnet.com
Click on section 2-4 and WATCH online problems 1-4 and complete "Got It's" that follow.
THESE WILL BE CHECKED THURSDAY AND POINTS WILL BE DEDUCTED IF NOT COMPLETE.

Tuesday:

In Class:
Linear vs. Nonlinear Worksheets attached
Homework:
Complete Linear vs. Nonlinear Worksheets

Wednesday:

None

Thursday:

In Class:
Section 2-4: Notes in composition book and #1-7
Homework:
Section 2-4: #8-15
Complete vocabulary sheet 2-4 attached

Friday:

Go to text website: www.pearsonsuccessnet.com
Click on section 2-5 and WATCH online problems 1-3 and complete "Got It's" that follow.
THESE WILL BE CHECKED MONDAY AND POINTS WILL BE DEDUCTED IF NOT COMPLETE.

Tuesday's Assignment

Name _____ Period _____

9.2 Notes – Linear vs. Nonlinear Functions

I CAN...

- **Determine if a relationship is linear or nonlinear from a table, graph, equation, or verbal description.**
- **Give examples of nonlinear functions.**

Function 1: $y = -3x + 5$

$y = -3(-1) + 5$

x	y
-1	
0	
1	
2	

Function 2: $y = x^3 + 1$

x	y

Function 3: $y = x^2 - 2$

x	y

Function 4: $y = \frac{2}{5}x$

x	y

Function 5: $y = -3$

x	y

Function 6: $y = -3x^2$

x	y

Function 7: $y = \frac{1}{x}$

x	y

Tuesday

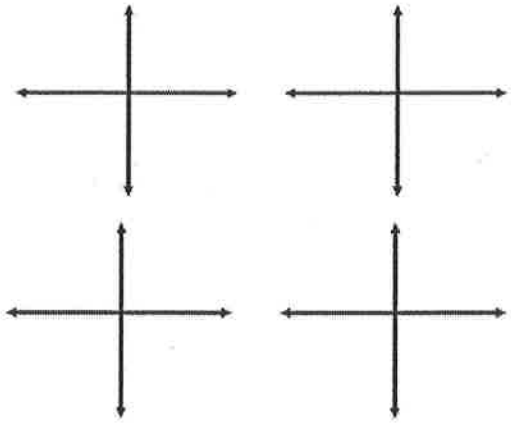
Linear Functions

Equation: $y = mx + b$ y = _____ x + _____ (slope) (y-intercept)

Graph: _____ Line

Table:

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



How do you know if a linear EQUATION is increasing or decreasing?

How do you know if a linear GRAPH is increasing or decreasing?

Determine if the equation is linear, or nonlinear (tell how you know). If it is linear, is it increasing or decreasing (tell how you know)?

1) $y = \frac{1}{3}x + 3$

Linear or nonlinear... why?

Increasing or decreasing... why?

2) $y = \frac{1}{4}(3)^x$

Linear or nonlinear... why?

Increasing or decreasing... why?

3) $y = x^2 + 3x + 1$

Linear or nonlinear... why?

Increasing or decreasing... why?

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

Linear or nonlinear... why?

Increasing or decreasing... why?

5) $y = \frac{x}{3}$

Linear or nonlinear... why?

Increasing or decreasing... why?

6) $y = x$

Linear or nonlinear... why?

Increasing or decreasing... why?

Tuesday

7) $y = x^3 + x^2 + 1$

Linear or nonlinear... why?

Increasing or decreasing... why?

8) $y = 1$

Linear or nonlinear... why?

Increasing or decreasing... why?

9) $y = x^2$

Linear or nonlinear... why?

Increasing or decreasing... why?

Tell whether the table represents a linear or nonlinear function. If it is linear, is it increasing or decreasing?

10)

x	−3	−2	−1	0	1
y	−7	−5	−3	−1	1

11)

x	−2	−1	0	1	2
y	2	0.5	0	0.5	2

12)

x	−2	−1	0	1	2
y	8	2	0	2	8

13)

x	-1	0	1	2
y	6	2	$\frac{2}{3}$	$\frac{2}{9}$

14)

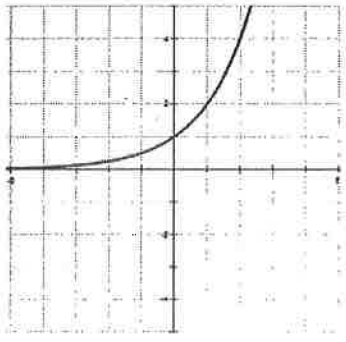
x	-2	-1	0	1	2
y	$\frac{2}{9}$	$\frac{2}{3}$	2	6	18

15)

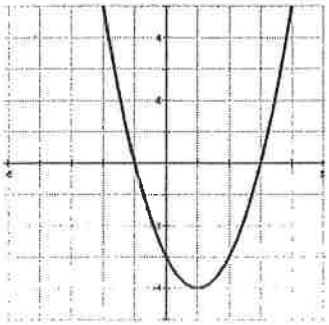
x	-2	-1	0	1	2
y	-4	-1	2	5	8

Determine if the graph is linear or nonlinear. If it is linear, is it increasing or decreasing?

16)



17)



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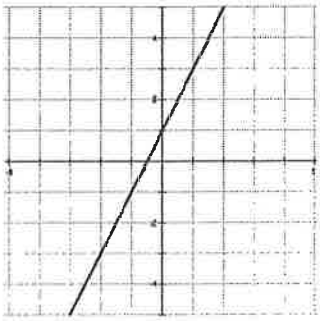


Tuesday

SCORE:
____ / 22
_____%

Name _____ Period _____

9.2 HW

You also need to finish the examples problems on your notes that we skipped.

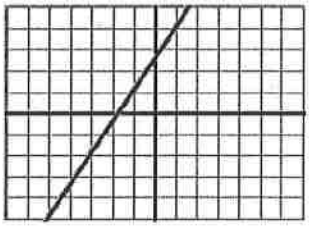
Tell whether the equation, graph, or table shows a linear or nonlinear function. If it is linear, is it increasing or decreasing? Remember to explain your answers.

1) $y = 3 - 4x^2$

2) $y = 4x - 6$

3) $y = 1.05^x$

4)



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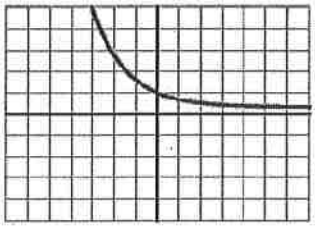

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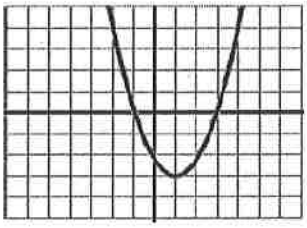


7)

x	y
-2	0.111
-1	0.333
0	1
1	3
2	9

8)

x	y
-2	7
-1	2
0	-1
1	-2
2	-1

9)

x	y
-2	-2
-1	1
0	4
1	7
2	10

10) Give an example of the graph, table and equation of a nonlinear function.

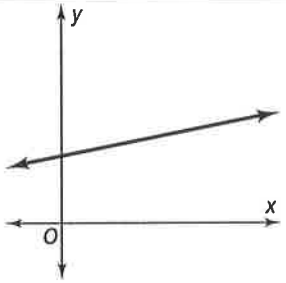
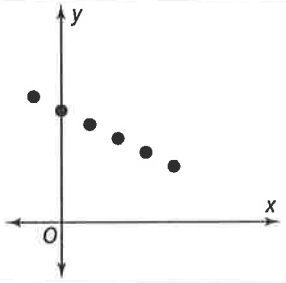
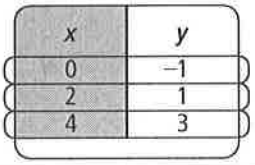
Thursday's Assignment

Name _____ Class _____ Date _____

Additional Vocabulary Support 2-4

Graphing a Function Rule

Complete the vocabulary chart by filling in the missing information.

Word or Word Phrase	Definition	Picture or Example
continuous function	A continuous function has a graph that is unbroken.	
discrete function	**1.**	
function rule	Describes the relationship between the input and the output.	**2.**
independent variable	**3.**	
isolated points	Points that are not connected	**4.**

x	y
0	−1
2	1
4	3