Spiral 11/1
Math 1

Name: _____
Date: _____Period: _____

<u>Directions</u>: Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) Solve the following and graph the solutions on a number line.

$3x - 2 > 9 + 5x$

2) Lucy and Barbara began saving money the same week. The information below shows the models for the amount of money Lucy and Barbara had saved after x weeks.
Lucy's Savings f(x) = 10x + 5
Barbara's Savings g(x) = 7.5x + 25
After how many weeks will Lucy and Barbara have the same amount of money saved?
A 1.1 weeks
B 1.7 weeks
C 8 weeks
D 12 weeks

3) Rewrite the following expressions so that each expression does not contain an exponent.

a) $\frac{2^3}{5^2}$ b) $\frac{2^2}{2^6}$
c) 6^0 d) $\frac{3^{-2}}{2^4}$

4) Patrice works at a museum giving tours. Patrice would like to know how many words she speaks in a year giving tours. The average person speaks about 150 words per minute. Patrice led tours that were 25 minutes long, 6 times per day, 5 days a week. About how many words would Patrice have spoken in a year?

5) Solve the following equation:

$\frac{1}{2}(2p + 9) = -p + 5$

6) Is the following a function?

x	y
0	0
3	2
5	4
7	6
9	4

7) Solve: -3(4x + 3) + 4(6x + 1) = 43

8) What is the slope of the line that passes through (-4, -3) and (-2, -2)?

9) Is the following function linear or non-linear?

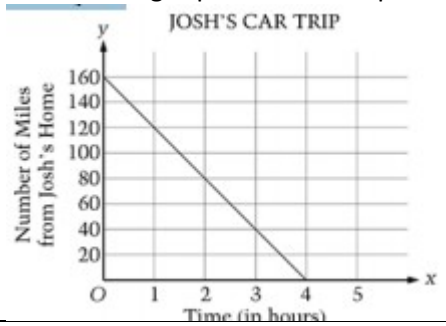
$y = -2x^2 + 3$

10) Write an equation that models the linear relationship in the table.

x	y
-2	8
0	2
1	-1

11) Write an equation for the line that has a rate of change of 1/2 and passes though the point (-2, 5).

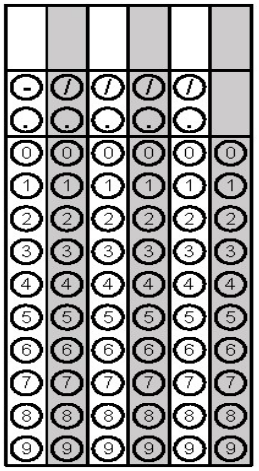
12) The linear graph below describes Josh's car trip from his grandmother's home directly to his home. What was Josh's average speed for the trip?



Answers

1) _____
2) _____
3a) _____
3b) _____
3c) _____
3d) _____
4) _____
5) _____
6) _____
7) _____
8) _____
9) _____
10) _____
11) _____

12) GRID RESPONSE



Spiral 11/8
Math 1

Name: _____
Date: _____Period: _____

<u>Directions</u>: Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) Suppose that the function $f(x) = 2x + 20$ represents the cost to rent x movies a month from an internet movie club. Makayla now has $10. How many more dollars does Makayla need to rent 7 movies next month?

2) The table below shows the distance a car has traveled.

Minutes (x)	25	50	75	100	125
Distanced Traveled (y)	20	40	60	80	100

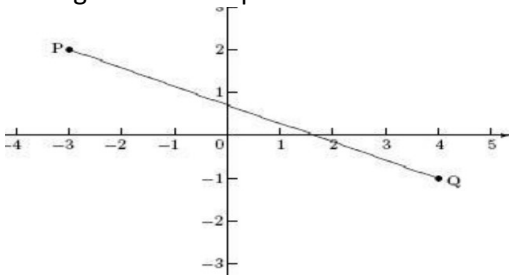
What is the slope of the linear model?

3) Linear or Exponential?

$y = -1.6x + 50$

4) Find the slope: (7, 8) and (-3, 8)

5) What is the domain and range of the line segment on the plane below?



6) The sequence below show the total number of days Francisco had used his gym membership at the end of weeks 1, 2, 3, and 4. 4, 9, 14, 19, …
Assuming the pattern continues, which function could be used to find the total number of days Francisco had used his gym membership at the end of week n?

A. $f(n) = n + 5$ B. $f(n) = 5n - 1$
C. $f(n) = 5n + 4$ D. $f(n) = n^2$

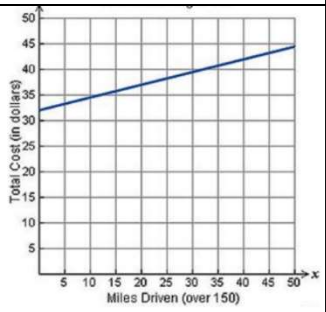
7) Linear or Exponential?

$f(n) = f(n-1) \bullet 4$
$f(0) = 3$

8) Write an explicit function for the following sequence:

4, 12, 36, 108, …

9) What does the slope of this graph represent? Include a number and label. (i.e. 52 miles per hour)



10) Joanna's tree starts at 4 feet tall and grows 15% each year. What is the tree's height after 12 years?

11) Two times Antonio's age plus three times Sarah's age equals 34. Sarah's age is also five times Antonio's age. How old is Sarah?

12) Using the ordered pairs, write in equation in **slope-intercept form** to represent the relation.

(-1, 8), (-4, -4), (-2, 4)

13) Write a linear equation in **point-slope form** with the same slope as $y = 4x + 5$ that goes through (1, 5).

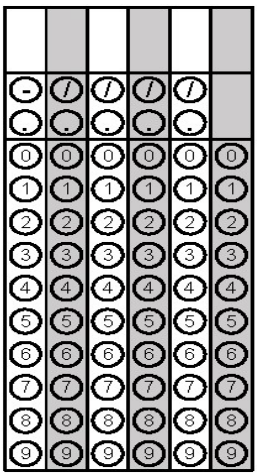
14) Discrete or Continuous?

the number of students in a class

15) Lucy's grade for her CC1 class will be the average of her Unit 1 and Unit 2 tests and her Unit 3 project. If she got a 91 on her Unit 1 test and an 88 on her Unit 2 test, what mush she score on her project to earn a 90 average?

<u>Answers</u>

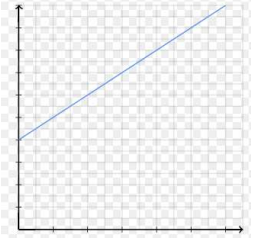
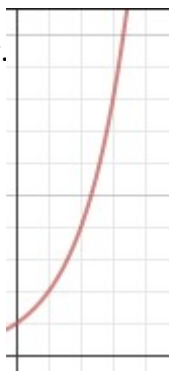
1) _____
2) _____
3) _____
4) _____
5) D:_____
R: _____
6) _____
7) _____
8) _____
9) _____
10) _____
11) _____
12) _____
13) _____
14) _____
15) GRID RESPONSE



Spiral 11/15
Math 1

Name: _____
Date: _____Period: _____

<u>Directions</u>: Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) Find the x- and y-intercepts of the equation. (To find the x-intercept substitute 0 in for y. To find the y-intercept, substitute 0 in for x) **Write your answers as ordered pairs.** $2x + 3y = 6$	2) Rewrite in slope-intercept form: $3x + 4y = 24$
3) What is the y-intercept of the following equation: $4x + 8y = 32$	4) What is the slope of the following equation: $4x + 8y = 32$
5) What is the equation of a line in **slope-intercept form** that has a slope of -2 and a y-intercept of (0,5)?	6) Write the equation in **slope-intercept form**: $-2x + 3y = 6$
7) Write an equation in **point-slope form** for the line that has a slope of 4 and goes through the point (-2, 3).	8) Find the x- and y-intercepts of the equation: $6x + 2y = 4$
9) Find the slope using the following two points: (2, -5) and (0, -7)	10) Write an equation for the line in **slope-intercept form** that has a slope of -4 and goes through the point (0, -7).
11) Write a recursive equation for the following pattern and then determine the 8th term: 4, 10, 16, 22, 28, …	12) Discrete or continuous: a dog's weight
13) Which graph matches the situation: a population of otters is doubling each year. A.  B. 	14) A car was purchased at $20,000 and loses value at a rate of 7% per year. Find the value of the car after 5 years. Round to the nearest cent.
15) $f(x) = x^2 - 2x + 2$; find $f(-3)$	

<u>Answers</u>

1) x-int: _____

y-int: _____

2) _____

3) _____

4) _____

5) _____

6) _____

7) _____

8) x-int: _____

y-int: _____

9) _____

10) _____

11) _____

_____

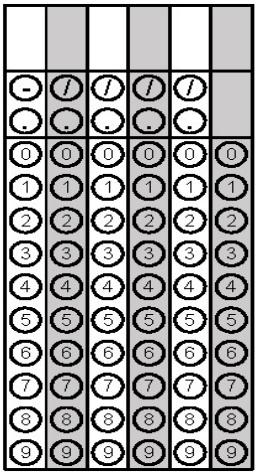
8th Term: _____

12) _____

13) _____

14) _____

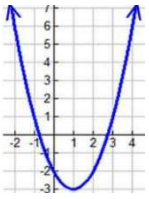
15) GRID RESPONSE



Spiral 11/22
Math 1

Name: _____
Date: _____Period: _____

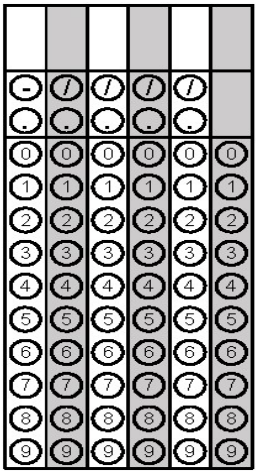
<u>Directions</u>: Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) True or False: n = 3 is a solution to the equation 2(n + 4) + 1 = 3	2) Which of the equations below has a value of x = 3? a) 3x + 7x = 35 b) 2(x – 1) = 5 c) 2(x + 3) + 1 = 10 d) 3(x + 1) + 2 = 14
3) Solve: 5(m + 3) + 6 + 2m = 0	4) Solve the following inequality. $2d - 3 \geq 7$
5) True or False: When I graph the solution to the following equation, I would use an open dot. $-4k + 3 \leq 15$	6) Write a recursive equation for the following sequence: 1, 4, 7, 10, ...
7) Write an explicit rule for the following sequence. 1, 2, 4, 8, 16, ...	8) Write an explicit equation for the following sequence: 1, 4, 7, 10, ...
9) Which model(s) are exponential functions? a) f(n)= 2 + 3n b) $f(n) = 6(2)^n$ c) c) $f(n) = 2(n)^7$ d) 	10) Which of the following are examples of LINEAR equations: a. y= 2 b. y= 3x – 4 c. 2x – 3y = -6 d. x= -7
11) Write an equation that has a slope of $-\frac{4}{5}$ and a y-intercept of (0, 7).	12) What is the domain of all linear functions?
13) What is the range of all linear functions?	14) What is the domain of all exponential functions?
15) Solve: $2x - 4 = x + 7$	

<u>Answers</u>

1) _____
2) _____
3) _____
4) _____
5) _____
6) _____
7) _____
8) _____
9) _____
10) _____
11) _____
12) _____
13) _____
14) _____

15) GRID RESPONSE



Spiral 12/6
Math 1

Name: _____
Date: _____Period: _____

<u>Directions</u>: Complete the following problems. Show all of your work. You MUST write your answer in the answer blank.

1) Write the equation of the line in **point-slope form** that has the same slope as to y = $\frac{1}{5}$x + 3 and passes through the point (4, 5).

2) Write the equation of the line in **slope-intercept form** that has the same slope as to y = $\frac{1}{5}$x + 3 and passes through the point (4, 5).

3) Write the equation of the line in **point-slope form** that has a slope of $-\frac{4}{5}$ and passes through the point (0, 7).

4) Write the equation of the line in **slope-intercept form** that has a slope of $-\frac{4}{5}$ and passes through the point (0, 7).

5) Find the slope of the line that passes through the two points: (5, 7) (-4, 12)

6) Given the point (4, 5) and a slope of -3, which of the following is written correctly in point-slope form?

a. y = 3(4 – x) +5
b. y = -3(x – 5) +4
c. y = -3(x – 4) +5
d. y = -5(-3 – x) +4

7) John has a car that costs $25,000. The car loses values at a rate of 4%. Write the explicit equation to model the situation.

8) The table below shows the relationship between the numbers of dozen cookies sold (x) at Wilson's Bakery and the profit (y) earned.

X	1	2	3	4	5
y	$5	$10	$15	$20	$25

Write a recursive equation to represent this relationship.

9) By the end of its 1st week a new movie has grossed $4.6 million. By the end of the sixth week it had grossed $13.8 million. If the movie continues to make money at the same rate, how much will it make by the 9th week? (write your in answer in millions)

10) Is the following relation a function? {(1, 3), (11,-2), (-4, 3), (0, 5), and (2, 6)}

11) Solve: -6(2 – 7x) = 2(7x – 6)

12) Solve: -8(-5 + 7n) = -8 – 8n

13) Solve: 5(m + 3) + 6 + 2m = 0

14) Solve: 3(3x + 4) = 6x + 8

15) Evaluate the following function for f(−4): f(x) = −20 + 3x

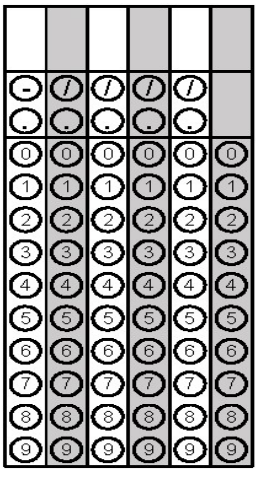
<u>Answers</u>

1) _____
2) _____
3) _____
4) _____
5) _____
6) _____
7) _____
8) _____

_____

9) _____
10) _____
11) _____
12) _____
13) _____
14) _____

15) GRID RESPONSE



Spiral 12/13
Math 1

Name: _____
Date: _____Period: _____

<u>Directions</u>: Complete the following problems. Show all of your work. You MUST write your answer in the answer blank. Remember to include labels when necessary!

1) Write the equation of the line in **point-slope form** that has the same slope as to y =2x -5 and passes through the point (1, 9).	2) Write the equation of the line in **slope-intercept form** that has the same slope as to y =2x -5 and passes through the point (1, 9).
3) Write the equation of the line in **point-slope form** that has the same slope as to $y = \frac{2}{3}x + 6$ and passes through the point (9, 2).	4) Write the equation of the line in **slope-intercept form** that has the same slope as to $y = \frac{2}{3}x + 6$ and passes through the point (9, 2).
5) You were asked to study the birth patterns of local fish. There are currently 2 fish housed in a tank at the nearest fishery. If the population should grow exponentially by a factor of 1.5 each year, write an explicit equation to model the situation.	6) You were asked to study the birth patterns of local fish. There are currently 2 fish housed in a tank at the nearest fishery. If the population should grow exponentially by a factor of 1.5 each year, write a recursive equation to model the situation.
7) During a free fall, a skydiver falls 16 feet in the first second, 48 feet in the 2nd second, and 80 feet in the third second. Write an explicit equation to model the situation.	8) During a free fall, a skydiver falls 16 feet in the first second, 48 feet in the 2nd second, and 80 feet in the third second. Write a recursive equation to model the situation.
9) Solve for r: $d = rt$	10) Solve for x: $y = mx + b$
11) Solve for y: $4x + 2y = 6$	12) Solve for r: $A = \pi r^2$
13) Solve: $5x + 1 \leq 3x - 17$	14) Solve: $-2x - 5 \geq 1$
15) The population of a town is decreasing at a rate of 3% each year. In 2000, there were 1700 people. Find the population of the town in 2011. (Round to the nearest whole number.)	

<u>Answers</u>

1) _____
2) _____
3) _____
4) _____
5) _____
6) _____

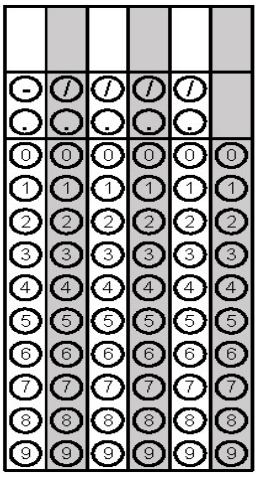
_____

7) _____
8) _____

_____

9) _____
10) _____
11) _____
12) _____
13) _____
14) _____

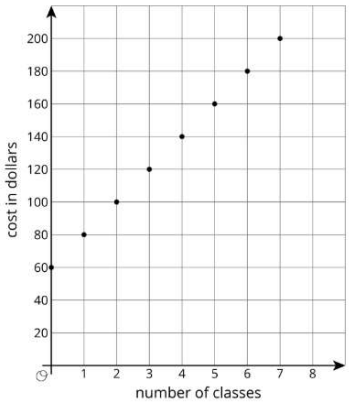
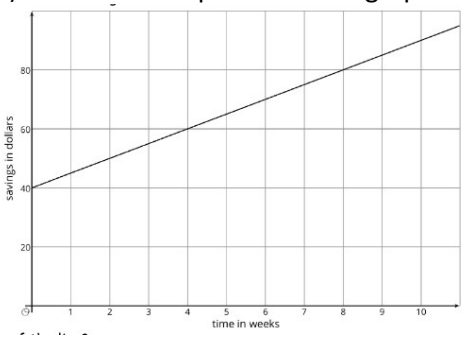
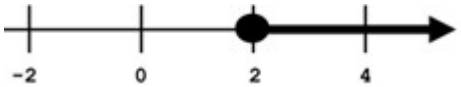
15) GRID RESPONSE



Spiral 12/20
Math 1

Name: _____
Date: _____Period: _____

<u>Directions</u>: Complete the following problems. Show all of your work. You MUST write your answer in the answer blank.

1) What is the slope of the line through the given points? (-5, 7) and (6, -2)	2) What is the slope of the line through the given points? (8, 4) and (-9, -3)
3) What is the equation of the graph?  	4) What is the equation of the graph? 
5) All sequences are: a. discrete b. continuous c. linear d. exponential	6) $f(x) = 23x + 7$ and $g(x) = -3x + 14$ If $h(x) = f(x) + g(x)$, what is the simplified form of $h(x)$?
7) Paul is looking to put an ad in the local newspaper. One company charges \$14 for the first 3 lines and then \$2 for each line after that. Write an equation to represent the company's pricing in **point-slope form**.	8) Arya is an avid coin collector. She decides to start keeping better track of her coin collection. After 15 days she has 155 coins. After 22 days she has 218 coins. Write an equation to represent the situation in **point-slope form**.
9) Sansa figured out that she could make \$50 per pool to clean pools during the summer. She did, however, need to purchase some equipment to get started. After cleaning 3 pools, she was still in debt 15 dollars. Write an equation in **slope-intercept form** to represent the situation.	10) A zookeeper thinks there is a problem with the Naked Mole-Rat population at the zoo. He starts keeping track of the animals in the tunnels. 7 days into his monitoring he counts 120 mole rats, 13 days in he counts 108. Write an equation in **slope-intercept form** to represent the situation.
11) Write the inequality modeled on the number line:  	12) Write the compound inequality modeled on the number line: 
13) Solve for y and write in **slope-intercept form** (y=mx+b): $3x + 2y = 12$	14) Solve for x: $ax + by = c$
15) Solve for x: $2(x - 5) = -2 + 5x + 25$	

<u>Answers</u>

1) _____
2) _____
3) _____
4) _____
5) _____
6) _____
7) _____
8) _____
9) _____
10) _____
11) _____
12) _____
13) _____
14) _____
15) GRID RESPONSE