Get out your homework and start checking your answers. Test on Tuesday!

Classwork - Test Review

1. Which ordered pair is *not* a point on the graph of $y = \frac{1}{2}x - 7$?

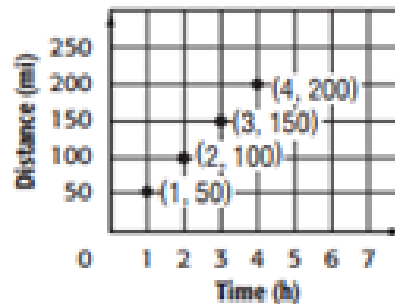   A. $\left(1, -6\frac{1}{2}\right)$ B. $(-2, -8)$ C. $(0, -7)$ D. $(2, 8)$

   1. _____**D**_____

2. What is $f(-2)$ if $f(x) = \frac{1}{2}x$?

   F. -2 G. -1 H. 0 I. 1

   2. _____**G**_____

3. The graph at the right shows Jeremy's distance from home each hour he is on a car trip. How many miles will he be from home after 10 hours?

   A. 350 miles   C. 500 miles

   B. 400 miles   D. 550 miles

   3. _____**C**_____

4. Which table represents a linear function?

   F.

x	5	3	1	-1
y	6	8	10	12

   H.

x	-2	0	2	4
y	0	1	3	6

   G.

x	-3	-1	1	3
y	1	4	9	16

   I.

x	7	4	1	-2
y	-1	-3	-6	-9

   4. _____**F**_____

5. Juana's monthly cost of sending text messages can be represented by the function $y = 0.05x$, where y represents the total cost and x represents the number of text messages. The table shows Tanya's monthly cost of sending text messages. Which statement is *not* true?

Messages	Cost ($)
20	10
30	11
40	12
50	13

A. Tanya's initial cost is greater than Juana's initial cost.
B. Tanya pays more per text than Juana.
C. Juana pays $7.50 for sending 150 text messages.
D. Tanya pays $20 for sending 150 text messages.

5. ___D___

6. Which of the following represents a nonlinear function?
F. $y = 5x + 7$ G. $y = x^2$ H. $y = -2x$ I. $y = x$

6. ___G___

$y = mx + b$ $m = 2$

$(\overset{x}{5}, \overset{y}{25})$

7. Nate has a certain number of songs on his MP3 player. Each week, he plans to add 2 more songs. After 5 weeks, he had 25 songs on his MP3 player. Which statement is true?
A. Nate adds 5 songs on his MP3 player per week.
B. Nate adds 10 songs on his MP3 player per week.
C. The initial number of songs on Nate's MP3 player is 15.
D. The initial number of songs on Nate's MP3 player is 2.

7. ___C___

$25 = 2(5) + b$
$25 = 10 + b$
$-10 \quad -10$
_____
$15 = b$

8. State the domain and range for the following relation.
$\{(-4, 4), (1, 2), (0, 3), (3, 2)\}$

8. ___domain: {-4, 0, 1, 3}; range: {2, 3, 4}___

9. Complete the function table for $f(x) = -2x + 1$.

9.

x	$f(x)$
-2	5
0	1
1	-1
2	-3

The grocery store sells cantaloupes for $4.50 per pound.

10. Write a function to represent the situation.

10. $c = 4.5p$

11. Is the function continuous or discrete? Explain.

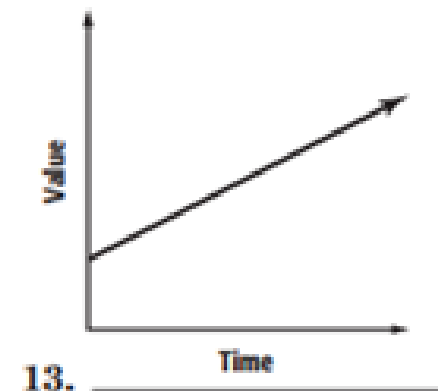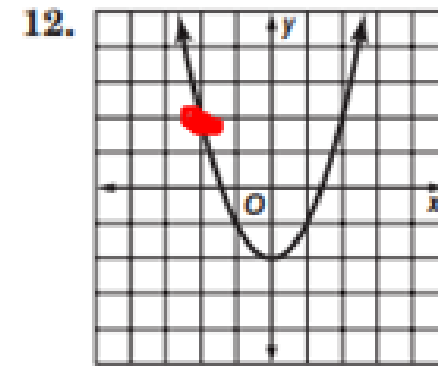11. continuous; You can have a fraction of a pound when you weigh cantaloupes.

12. Graph $y = x^2 - 2$.

12.

13. The value of a painting has increased steadily over time. Sketch a qualitative graph to represent this situation.

13.

1) Diana makes $8.50 an hour working as a life guard

A) Write a function where the money earned *m* is a function of the hours she has worked *w*.

Function → _____

B) Make a table of ordered pairs in which the x-coordinate represents the number of hours and the y-coordinate represents the money earned for 1, 2, 3, or 4 hours.
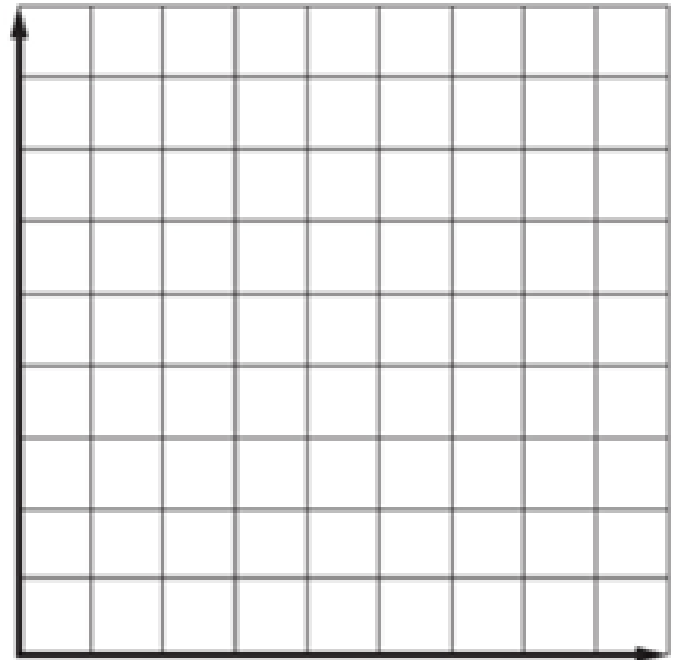
x	y

C) Graph the ordered pairs. **LABEL the graph.**

D) Identify the independent and dependent variable of the relationship.

IV: _____

DV: _____

E) Is the function discrete or continuous? Explain. (Make sure your graph matches this answer)

Explanation:

F) State the domain and range of the relationship.
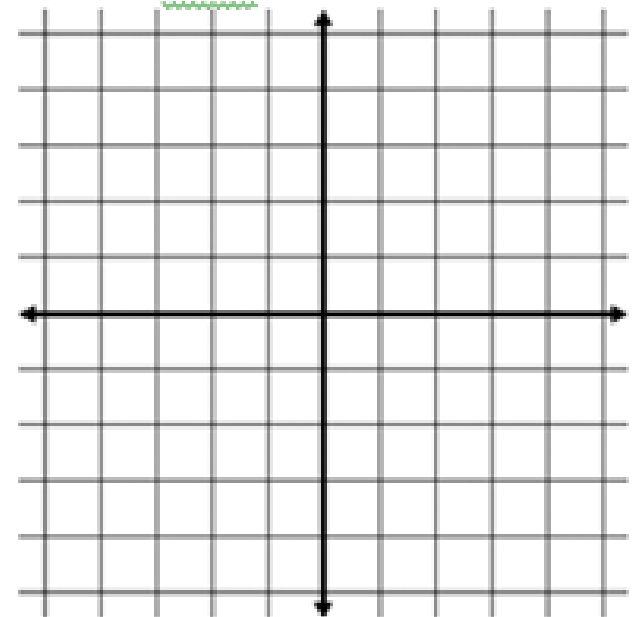
Domain: {_____}   Range: {_____}

2) Use the four given values for x to complete the following function tables Then state the domain and range of the function. Graph the function.

A) $f(x) = -2x + 1$

Domain: {_____}

x	$-2x + 1$	$f(x)$
-1		
0		
1		
2		

Range: {_____}

B) $f(x) = \frac{3}{4}x - 2$

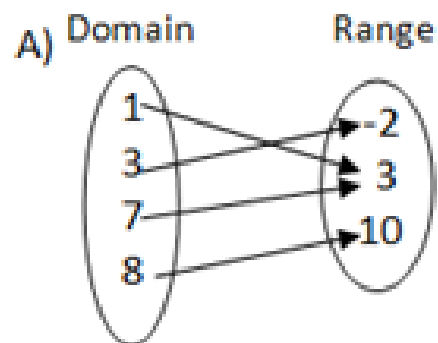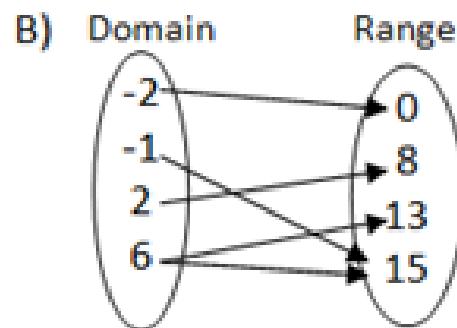| x	$-2x + 1$	$f(x)$
-4		
-2		
0		
4		

Domain: {_____}

Range: {_____}
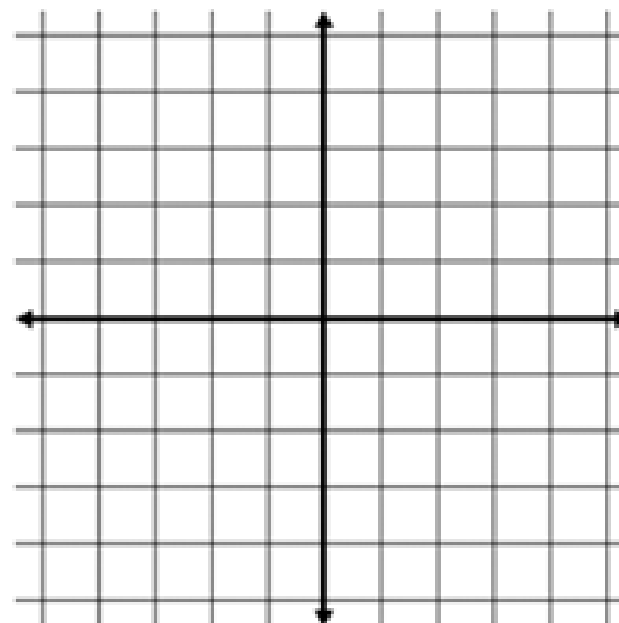
3) Determine if the if the following relations in the diagrams are functions. If it is not a function, circle the domain value that proves it isn't a function.

A) Domain   Range

```
1
3      2
7      3
8     10
```

Function? Yes or No

B)   Domain   Range

```
-2      0
-1      8
2      13
6      15
```

Function? Yes or No

4) Determine if the following relations are functions. **Draw a diagram with arrows**. If it is not a function, circle the domain value that proves it isn't a function.

A) $\{(0, 4), (4, 1), (4, 7), (5, -5)\}$

Domain   Range

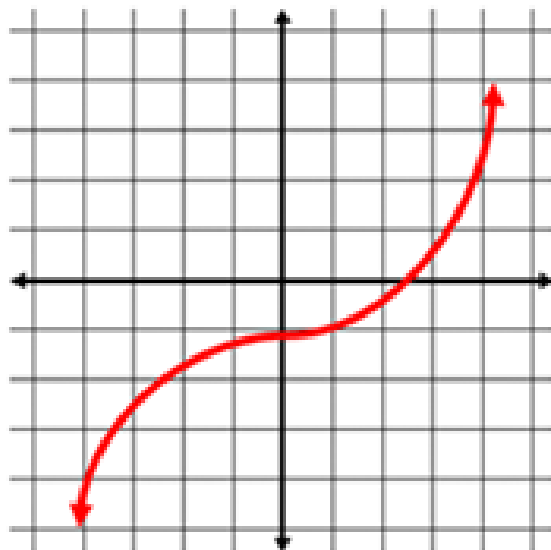B) $\{(-2, 3), (0, 3), (2, -1), (7, 8)\}$

Domain   Range

Function? Yes or No
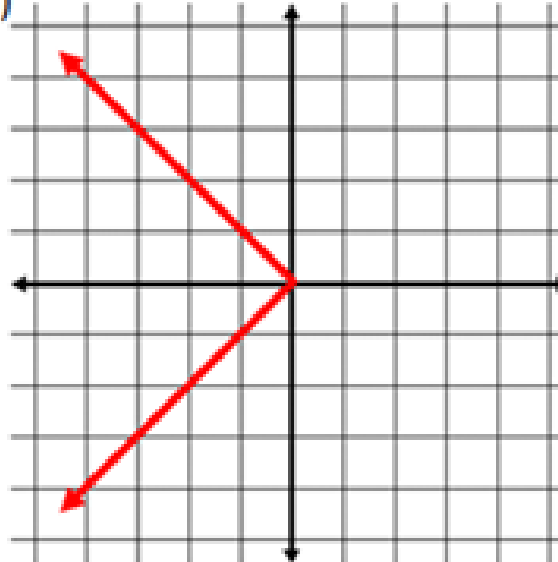
Function? Yes or No

5) Determine if the if the following relations are functions.
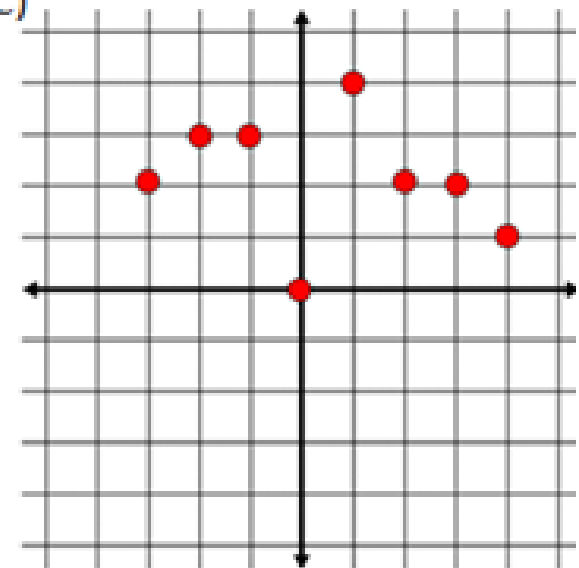
A)

Function? Yes or No

B)

Function? Yes or No

C)

Function? Yes or No

6) Two families are going on vacation and taking different routes. The table shows the number of miles *y* that the Miller family travels per hour *x* of travel. The graph shows the number of miles *y* that the Griswold family travels per hour *x* of travel. Compare the miles per hour for each family.

Miller's Rate of Change = _____
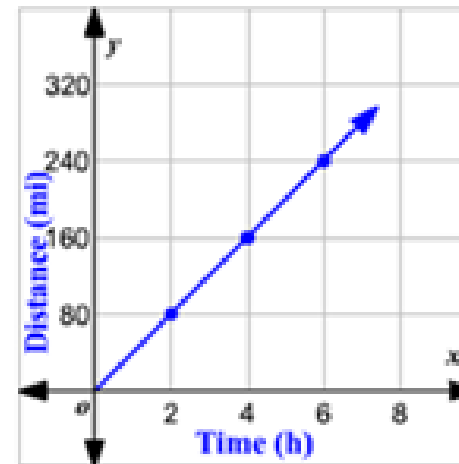
Griswold's Rate of Change = _____

Compare (**Write a complete sentence**):

_____

_____

_____

Miller Family

Hours	Miles
1	58
3	174
6	~~300~~ **348**

Griswold Family

$y = mx + b$

7) Johnny planted a tree that he bought from a tree nursery, that once planted grew 4 inches per month. After 6 months the tree was 63 inches tall. Assume the relationship is linear. Find and interpret the rate of change and the initial value.

$m = 4$ $(6, 63)$

$63 = 4(6) + b$

$63 = 24 + b$

$-24 \quad -24$

$39 = b$

Rate of Change = **4 inches/month**

Initial Value = **39 inches**

Interpretation of rate and initial value: _____

_____

_____

8) Determine whether each table is linear or nonlinear. SHOW WORK that proves table is linear or nonlinear and EXPLAIN.

A)

x	1	3	5	7
y	0	-5	-12	-21

Circle Answer
Linear or Nonlinear

Explanation: _____

_____

_____

B)

x	-2	1	4	7
y	3	7	11	15

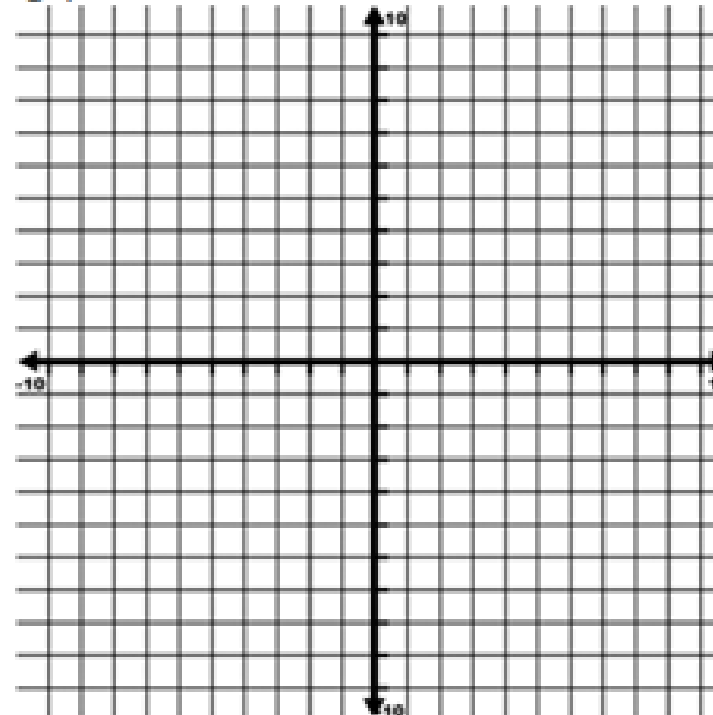**Circle Answer**
Linear or Nonlinear

Explanation: _____

_____

_____

9) Complete the table and then graph the following quadratic functions.
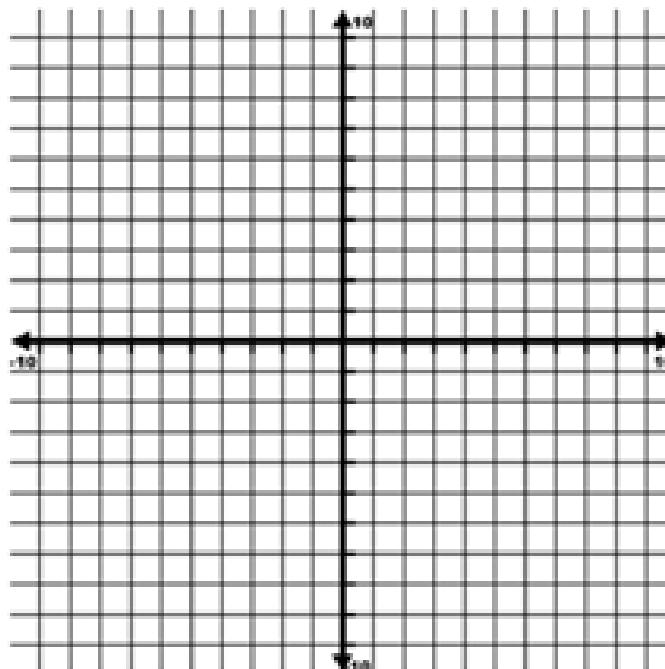
A) $y = 2x^2$

$2(-3)^2 = 18$

$2(-2)^2$

x	y
-3	18
-2	8
-1	
0	
1	
2	
3	

B) $y = -x^2 + 3$

$-(-3)^2 + 3$

$-1 \cdot 9 + 3$

$-9 + 3$

-6

x	y
-3	-6
-2	
-1	
0	
1	
2	
3	

C) $y = \frac{1}{2}x^2 - 9$

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