



Algebra II

Monday  
September 22, 2014



“Sometimes  
the questions  
are complicated  
and the answers  
are simple.”

~ Dr. Seuss





Algebra II  
Warm-Up

Monday  
September 22, 2014

What do you know about  
Domain and Range?

$x$	$y$
<b>D</b> omain	<b>R</b> ange
<b>I</b> ndependent	<b>D</b> ependent



EOC REVIEW Algebra 1

p. 41

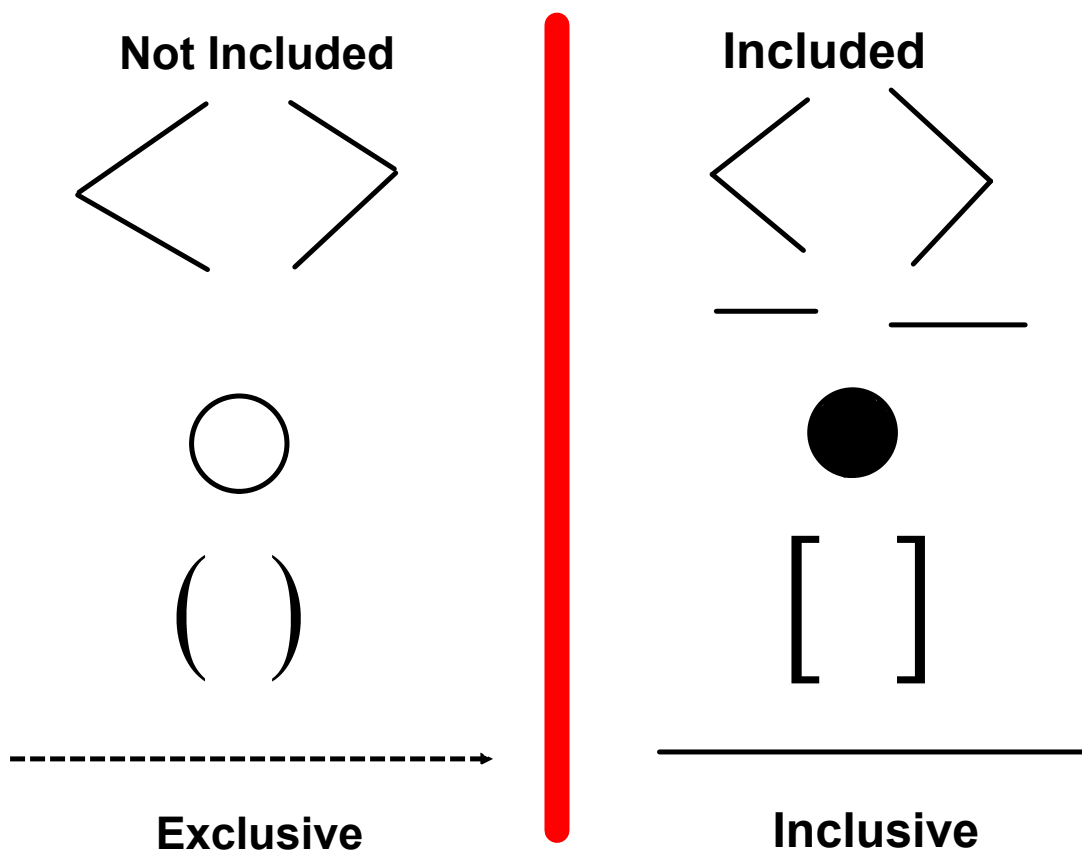
Reporting Category 2

<p><i>Properties and Attributes of Functions: The student will demonstrate an understanding of the properties and attributes of functions.</i></p>	<p><b>Name:</b> _____</p> <p><b>Date:</b> _____</p> <p><b>Period:</b> _____</p> <p><b>Topic:</b> <u>A.2B – Identify mathematical domains and ranges and determine reasonable domain and range values for given situations, both continuous and discrete.</u></p>
<p>Academic Language</p>	<p>Notes:</p>
<p>Domain</p>	
<p>Range</p>	
<p>Continuous</p>	
<p>Discreet</p>	
<p>Compound Inequality</p>	
<p>Open/Closed Circle</p>	
<p>Inequality Symbol</p>	
<p>Solution Set</p>	

A.2B	Identifying and Determining Domains and Ranges
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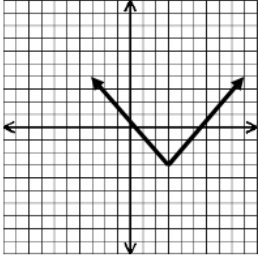
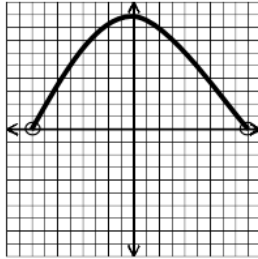
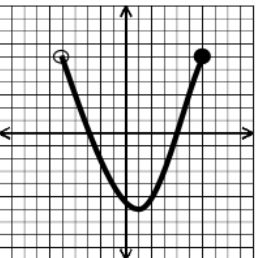
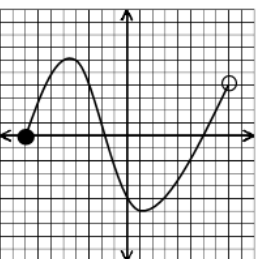
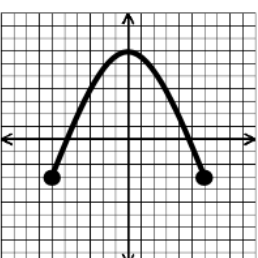
Find the domain and range of each graph.

<p>1) </p> <p>Domain: <math>\{-8, -5, -1, 4, 8\}</math></p> <p>Range: <math>\{7, 5, 0, 2, 5\}</math></p>	<p>2) </p> <p>Domain: <math>-8 \leq x \leq 2</math></p> <p>Range: <math>-4 \leq y \leq 1</math></p>
<p>3) </p> <p>Domain: <math>-6 &lt; x \leq 4</math></p> <p>Range: <math>-2 &lt; y \leq 6</math></p>	<p>4) </p> <p>Domain: <math>-3 &lt; x &lt; 5</math></p> <p>Range: <math>-1 &lt; y &lt; 3</math></p>
<p>5) </p> <p>Domain: <math>-3 \leq x &lt; \infty</math></p> <p>Range: <math>-\infty &lt; y \leq 2</math></p>	<p>6) </p> <p>Domain: <math>-\infty &lt; x &lt; 5</math></p> <p>Range: <math>-2 &lt; y &lt; \infty</math></p>



For each graph, find the domain and the range.

$\mathbb{R}$

<p>7. Domain: <math>-\infty &lt; x &lt; \infty</math> ALL REAL #'s</p> <p>Range: <math>-3 \leq y &lt; \infty</math> <math>-3 \leq y</math></p>	
<p>8. Domain: <math>-8 &lt; x &lt; 9</math></p> <p>Range: <math>0 &lt; y \leq 9</math></p>	
<p>9. Domain: <math>-5 &lt; x \leq 6</math></p> <p>Range: <math>-6 \leq y \leq 6</math></p>	
<p>10. Domain: <math>-8 \leq x &lt; 8</math></p> <p>Range: <math>-6 \leq y \leq 6</math></p>	
<p>11. Domain: <math>-6 \leq x \leq 6</math></p> <p>Range: <math>-3 \leq y \leq 7</math></p>	



Algebra II

Wednesday  
September 23, 2014

## MATHEMATICS

It may not teach us how to breathe oxygen  
and how to exhale carbon dioxide.  
Or to love a friend and forgive an enemy.  
It may not even help us find our way to our  
one true love.

But it gives us every reason to hope that  
**every problem has a solution.**





Algebra II  
Warm-Up

Wednesday  
September 24, 2014



What do you know about  
Domain and Range?







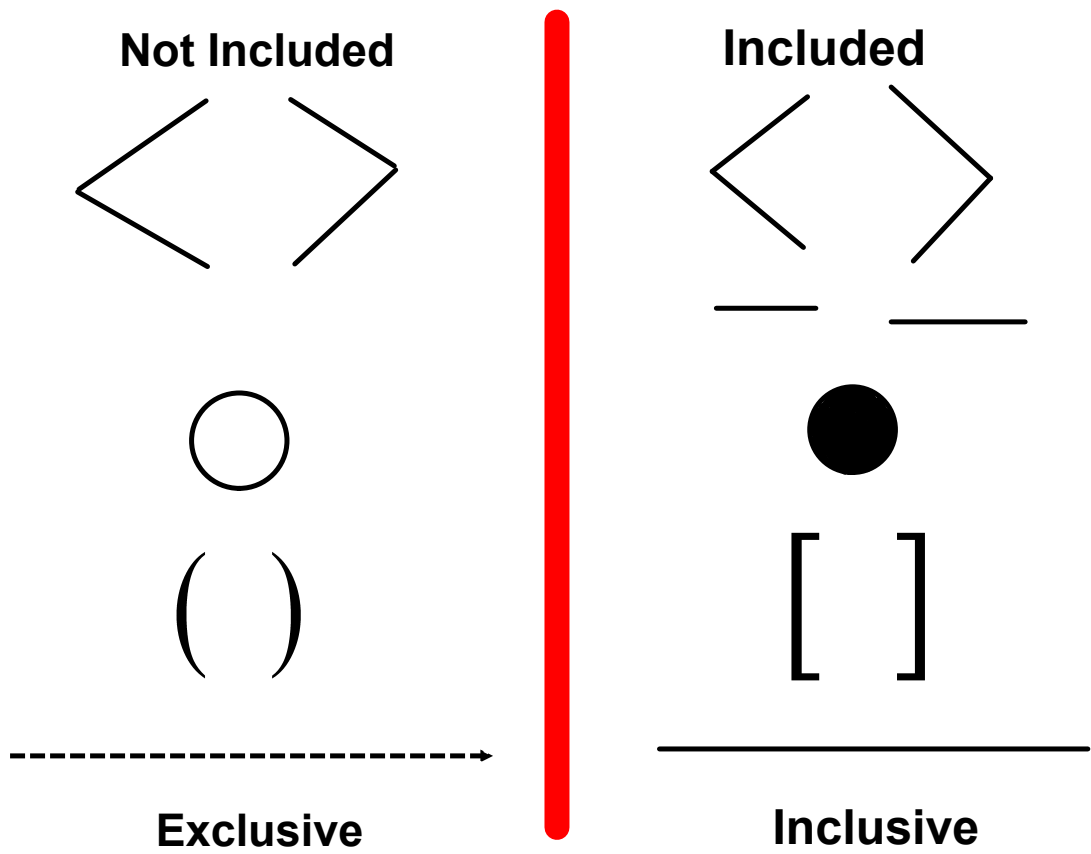
Algebra II  
Warm-Up

Wednesday  
September 24, 2014

What do you know about  
Domain and Range?

$x$	$y$
<b>D</b> omain	<b>R</b> ange
<b>I</b> ndependent	<b>D</b> ependent



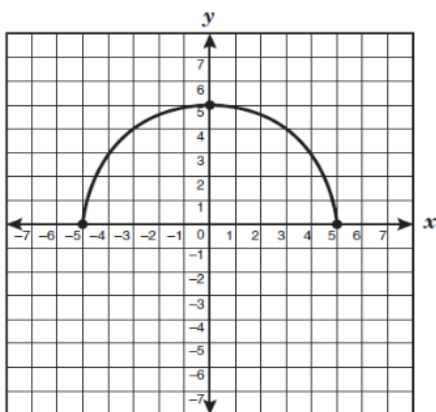


EOC REVIEW Algebra 1

Reporting Category 2

**Part II Practice Questions**

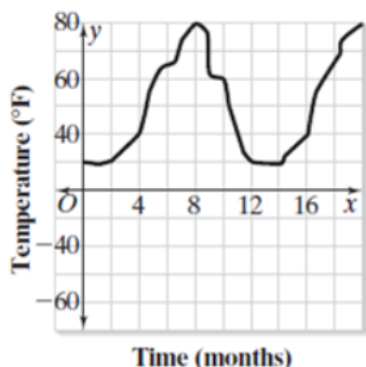
1. The graph of the function  $y = \sqrt{25 - x^2}$  is shown on the coordinate grid below.



What is the domain of the function?

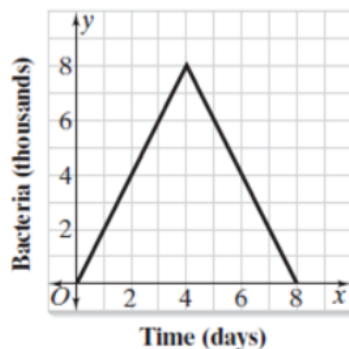
- F  $x \leq 5$
- G  $x \geq -5$
- H  $-5 \leq x \leq 5$
- J  $0 \leq x \leq 5$

2. The graph below shows the temperature recorded at a weather station during a period of several months. Which inequality best approximates the range of the function.



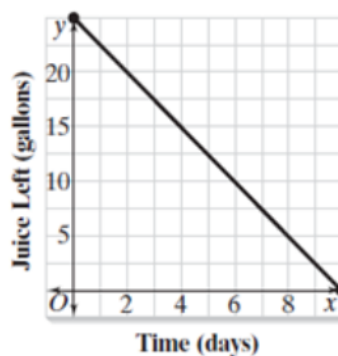
- A.  $0 \leq x \leq 20$
- B.  $0 < y < 20$
- C.  $20 \leq x \leq 80$
- D.  $20 < y < 80$

3. Find the domain and range of the function graphed below.



- F. Domain:  $0 \leq x \leq 4$ ; Range:  $0 \leq y \leq 4$
- G. Domain:  $0 \leq x \leq 8$ ; Range:  $0 \leq y \leq 4$
- H. Domain:  $0 \leq x \leq 4$ ; Range:  $0 \leq y \leq 8$
- J. Domain:  $0 \leq x \leq 8$ ; Range:  $0 \leq y \leq 8$

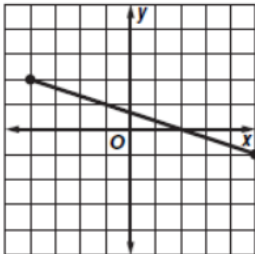
4. Ms. Saucedo bought 25 gallons of cranberry juice for the juice machine at her office. The graph below shows how much juice was left over time.



What is the domain of this function?

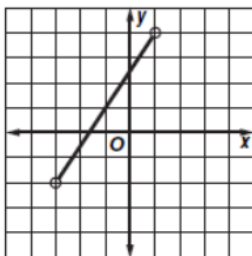
- A.  $0 \leq x \leq 10$
- B.  $0 < y < 10$
- C.  $0 < x < 10$
- D.  $0 \leq y \leq 10$

5. What is the domain of the following graph?



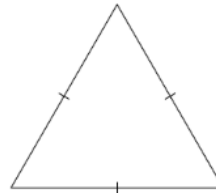
- A.  $-1 \leq y \leq 2$
- B.  $-1 < y < 2$
- C.  $-4 \leq x \leq 5$
- D.  $-4 < x < 5$

6. What is the range of the following graph?



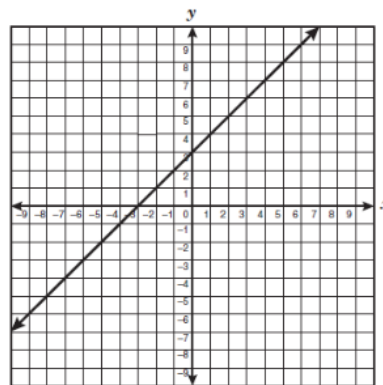
- F.  $-2 \leq y \leq 4$
- G.  $-2 < y < 4$
- H.  $-3 \leq x \leq 1$
- J.  $-3 < x < 1$

7. The perimeter of an equilateral triangle is 36 meters or less. Which set describes the domain for  $l$ , the length of one side of the triangle?



- A.  $\{0 < l \leq 3\}$
- B.  $\{0 < l \leq 6\}$
- C.  $\{0 < l \leq 12\}$
- D.  $\{0 < l \leq 36\}$

8. The graph of the function  $y = x + 3$  is shown below on the coordinate grid. What is the range of the function when the domain is less than or equal to 2?



- A. The range is  $\geq 2$ .
- B. The range is  $\leq 5$ .
- C. The range is  $\leq 3$ .
- D. The range is  $< 5$ .

Name \_\_\_\_\_ Date \_\_\_\_\_

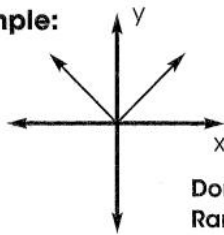
# Domain and Range I

Find the domain and range of each function.

Domain: Allowable values of  $x$

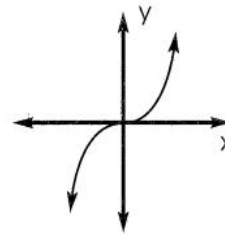
Range:  $y$  values

**Example:**



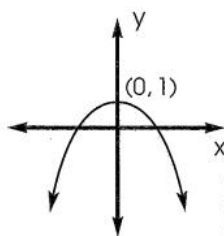
**Domain:** all Reals  $\{\mathbb{R}\}$   
**Range:** positive Reals (including 0)  
 $\{\mathbb{R} : y \geq 0\}$

1.



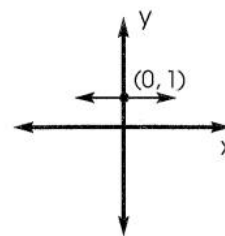
**Domain:**  
**Range:**

2.



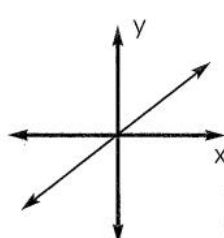
**Domain:**  
**Range:**

3.



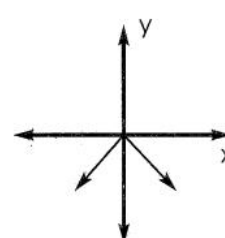
**Domain:**  
**Range:**

4.



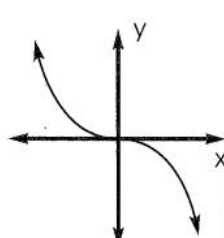
**Domain:**  
**Range:**

5.



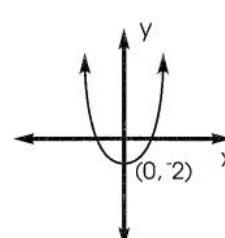
**Domain:**  
**Range:**

6.



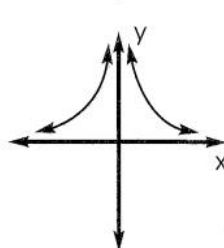
**Domain:**  
**Range:**

7.



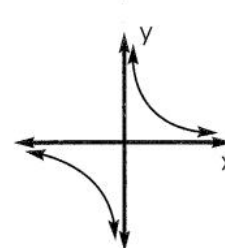
**Domain:**  
**Range:**

8.



**Domain:**  
**Range:**

9.



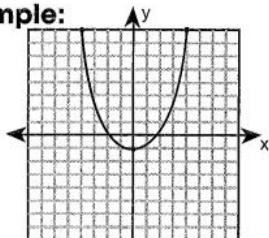
**Domain:**  
**Range:**

Name \_\_\_\_\_ Date \_\_\_\_\_

## Domain and Range II

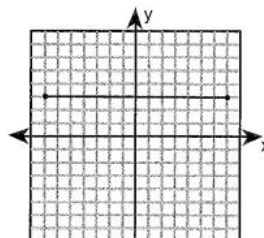
Find the domain and range from the graph.  
Each box on the graph equals 1 unit.

**Example:**



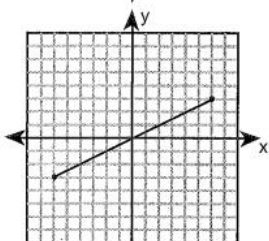
**Domain:**  $-4 \leq x \leq 4$   
**Range:**  $1 \leq y \leq 5$

1.



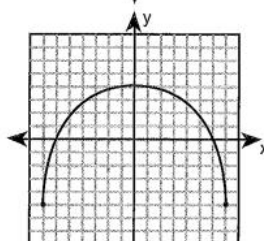
**Domain:**  
**Range:**

2.



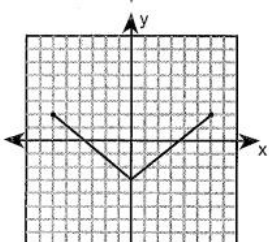
**Domain:**  
**Range:**

3.



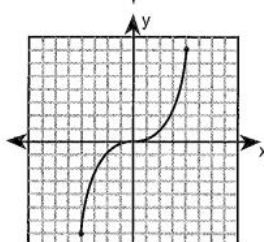
**Domain:**  
**Range:**

4.



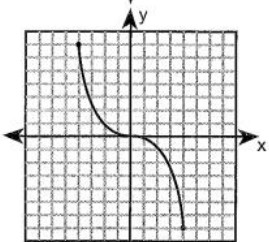
**Domain:**  
**Range:**

5.



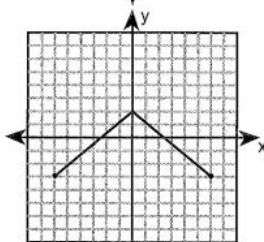
**Domain:**  
**Range:**

6.



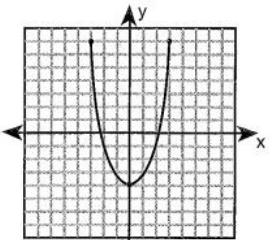
**Domain:**  
**Range:**

7.



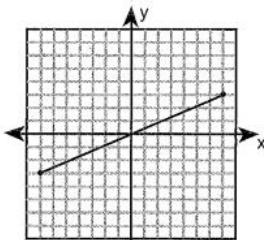
**Domain:**  
**Range:**

8.



**Domain:**  
**Range:**

9.



**Domain:**  
**Range:**



Algebra II

Friday  
September 26, 2014

# what part of

$$\mathcal{L}_{0,EW} = -(\overline{\psi_{0,L}}, \overline{\psi_{0,L}}) \gamma^\mu \left( \partial_\mu - i \frac{g}{\hbar} \vec{A}_\mu \cdot \left( \frac{1}{2} \vec{\sigma} \right) - \frac{1}{2} i \frac{g'}{\hbar} B_\mu \cdot (-1) \right) \begin{pmatrix} \psi_{0,L} \\ \psi_{0,L} \end{pmatrix} - \overline{\psi_{0,R}} \gamma^\mu \left( \partial_\mu - \frac{1}{2} i \frac{g'}{\hbar} (-2) B_\mu \right) \psi_{0,R}$$

# don't you understand?

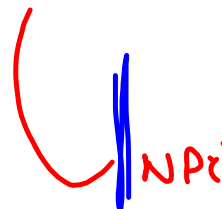
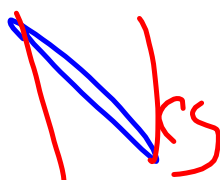
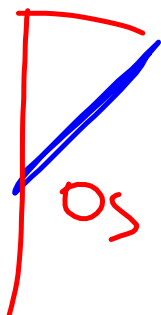




Algebra II  
Warm-Up

Friday  
September 26, 2014

What do you know about  
Scatter Plots?



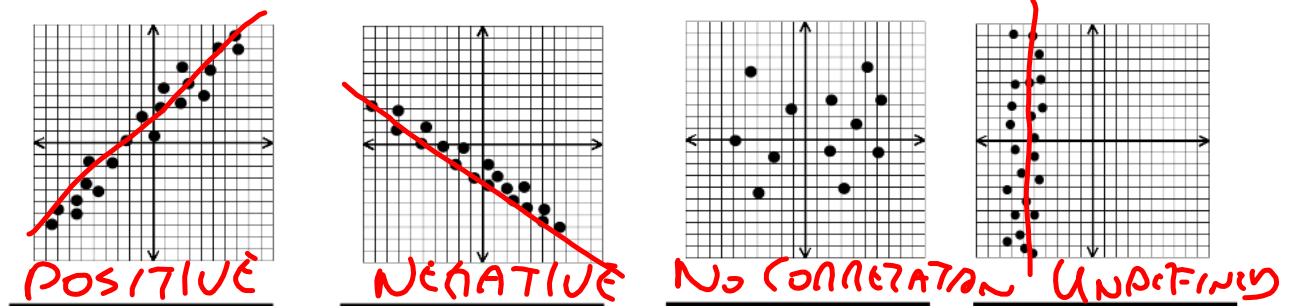


<p><i>Properties and Attributes of Functions: The student will demonstrate an understanding of the properties and attributes of functions.</i></p>	<p><b>Name:</b> _____</p> <p><b>Date:</b> _____</p> <p><b>Period:</b> _____</p> <p><b>Topic:</b> <u>A.2D – (Collect and) organize data, (make and) interpret scatter plots (including recognizing positive, negative, or no correlation for data approximating linear situations), and model, predict, and make decisions and critical judgments in problem situations.</u></p>
<p>Academic Language</p>	<p>Notes:</p>
<p>Scatterplot</p>	
<p>Positive Correlation/Trend</p>	
<p>Negative Correlation/Trend</p>	
<p>No Correlation</p>	
<p>Undefined Correlation</p>	
<p>Trend Line</p>	
<p>Reasonable Solution</p>	

A.2D	Organizing and Interpreting Data
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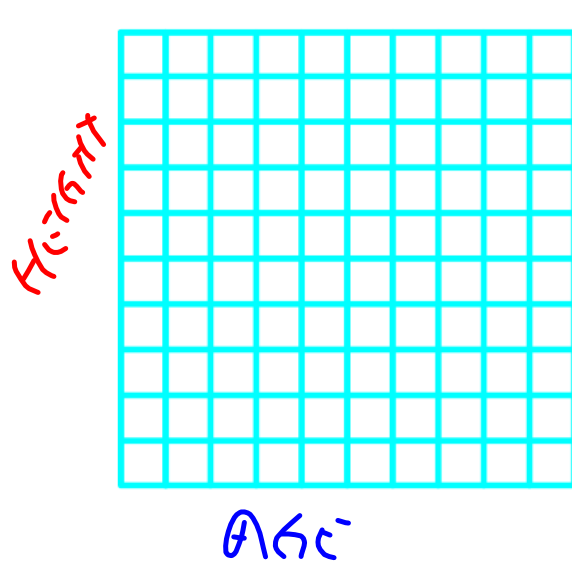
**Part I**

Based on the slope of your line of best fit, a scatter plot can have four types of correlation:



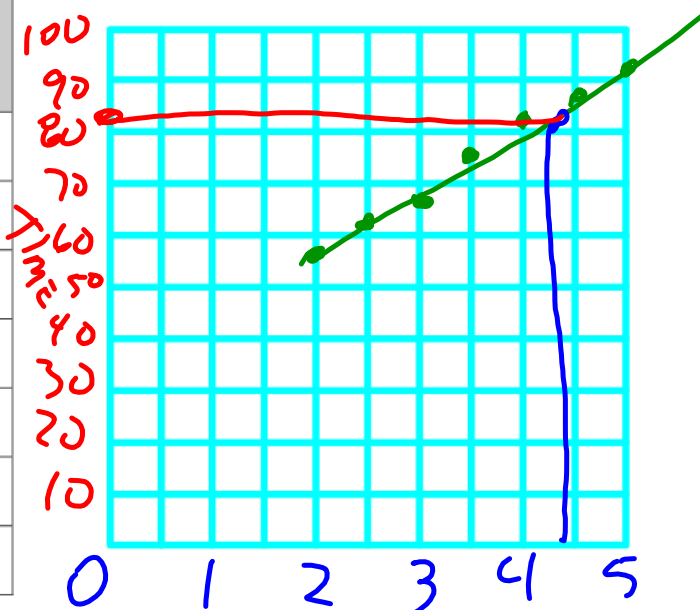
1. Gloria collected data on the ages and heights of a random sample of sixth, seventh, and eighth grade students at her school. Plot the given data on the scatterplot. What type of relationship can be seen between the age and height?

X	Age	Height (in)
	11	57
	14	68
	12	57
	13	60
	11	55
	12	59
	11	56
	13	62
	14	66
	12	58
	14	64



2. Old Faithful is a geyser in Yellowstone National Park. For more than 100 years, Old Faithful has erupted every day at intervals of less than 2 hours. The data in the table may suggest that the time between eruptions may be related to the length of the previous eruption.

X Length of Eruption (min.)	Y Time Until Next Eruption (min.)
2.0	57
2.5	62
3.0	68
3.5	75
4.0	83
4.5	89
5.0	92



Draw a line of best fit.

What type of correlation appears to exist?

POSITIVE

LENGTH

4.3

What is the independent variable?

LENGTH

What is the dependent variable?

TIME

Predict the time until the next eruption if the length of the eruption is 4.3 seconds.

\_\_\_\_\_

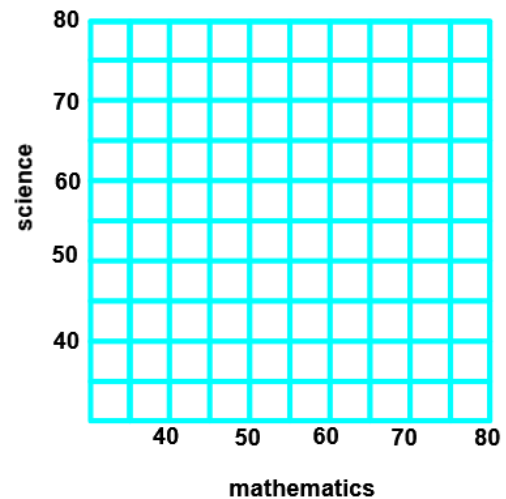
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Reporting Category 2

3. The average California Achievement Test scores in mathematics and science for Wesley High School sophomores from 1995 to 1999 are given in the table of data.

YEAR	Mathematics Score	Science Score
1995	60	65
1996	53	65
1997	44	57
1998	61	61
1999	70	67



Draw a scatter plot of the data. Use the coordinate plane provided.

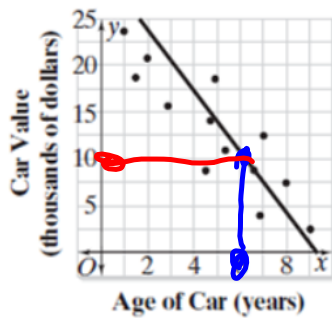
What type of correlation does the scatter plot show? \_\_\_\_\_

Predict the science score corresponding to a mathematics score of 50. \_\_\_\_\_

Predict the mathematics score corresponding to a science score of 65. \_\_\_\_\_

**Part II – Practice Questions**

1. The scatterplot below shows the relationship between the ages of various cars of the same model and their values.



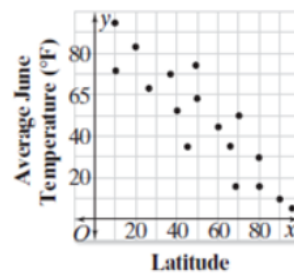
Approximately how much should you expect to pay for a 6-year-old car?

- F. \$5,000
- G. \$10,000**
- H. \$15,000
- J. \$20,000

2. Tina records the ages and weights of 12 children in her neighborhood. If she records this data in a scatterplot, what type of relationship will she most likely see?

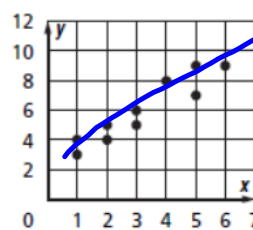
- A. positive correlation**
- B. negative correlation
- C. no correlation
- D. constant correlation

3. Describe the relationship between the average June temperature and the latitude positions of cities on the scatterplot below.



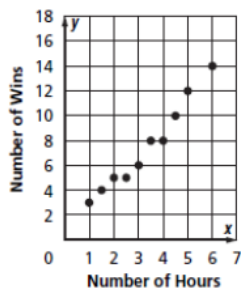
- ~~F. The temperatures are about the same at all latitudes~~
- ~~G. The lower the latitude, the lower the temperature.~~
- H. The higher the latitude, the lower the temperature**
- ~~J. The higher the latitude, the higher the temperature.~~

4. Which characterizes the graph below?



- A. strong positive correlation**
- B. weak positive correlation
- C. strong negative correlation
- D. neither positive or negative correlation

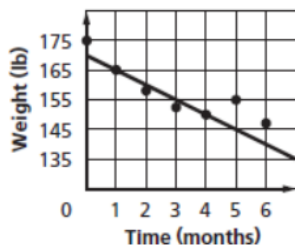
5. Several teams of trivia experts were questioned about the number of hours they practiced per week and number of wins. The graph shows the results of the survey.



Based on the results, if a team practices for 5 hours per week, which is the best estimate for the number of games the team can expect to win?

- A. 20
- B. 12
- C. 8
- D. 3

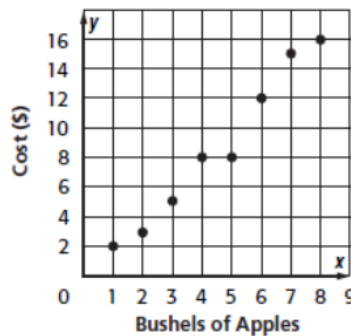
6. The graph below shows the decrease in Kris's weight over a 6-month period while she was on a diet.



Which is a reasonable conclusion about Kris's weight during the time shown on the graph?

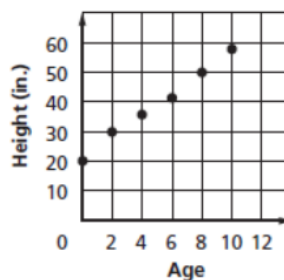
- A. Kris lost weight during every consecutive month on the diet.
- B. Kris's weight decreased by 10 pounds every month.
- C. Kris gained weight between the 4<sup>th</sup> and 5<sup>th</sup> months.
- D. Kris gained weight between the 5<sup>th</sup> and 6<sup>th</sup> months.

7. Which statement is true for the graph below?



- A. Every bushel costs the same.
- B. Four bushels should cost \$3.
- C. Five bushels should cost \$8.
- D. Eight bushels should cost less than \$14.

8. The scatter plot below shows data collected by a doctor.



Which is the patient's most likely height at 12 years?

- A. 58 in.
- B. 63 in.
- C. 72 in.
- D. 75 in.

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4. Given the following function, find the following:

$f(x) = 2x^2 - 4x + 9$

$f(-3) = \underline{39}$

$f(5) = \underline{39}$

$f(-10) = \underline{249}$

$2(-3)^2 - 4(-3) + 9$

5. Given the equation
- $y = 3x^2 + x - 14$
- , what would be the value of
- $x$
- when
- $y = 0$
- .

Value of  $x =$  \_\_\_\_\_

6. After a ball is dropped, the rebound height of each bounce decreases. The equation
- $y = 4(0.7)^x$
- shows the relationship between
- $x$
- , the number of bounces, and
- $y$
- , the height of the bounce, for a certain ball. What is the approximate height of the third bounce of this ball to the nearest tenth of a unit?

Height = \_\_\_\_\_

7. The path of a ball that is kicked upwards can be described by the equation
- $h = 35t - 5t^2$
- where
- $h$
- is the height of the ball in meters and
- $t$
- is the time in seconds.

$x = 3$

How high is the ball after 3 seconds?

 $y =$  After how many seconds will the ball be 50 m high?

$y = \underline{60}$

$x = \underline{2} \quad x = \underline{5}$

$$5x - 1x = 4x$$

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8. Solve the following equations.

~~$4x + 7 = 5x - 1 - x$~~

$3x - 9 = 7 + 2x - x$

$3(x - 1) = 5x + 3 - 2x$

~~$4x + 7 = 4x - 1$~~

No Solution

$x = \underline{\hspace{2cm}}$

9. If  $(-2.5, y)$  is a solution to the equation  $6x + 4y = 13$ , what is the value of  $y$ ?Value of  $y = \underline{\hspace{2cm}}$ 10. If  $(x, 4.5)$  is a solution to the equation  $2x - 8y = 6$ , what is the value of  $x$ ?Value of  $x = \underline{\hspace{2cm}}$ 11. Write the equation in  $y = mx + b$  form:  $2x - 3y = -9$  $y = mx + b$  (form)  $\underline{\hspace{2cm}}$ 12. Write the following inequality in standard form:  $y \leq -\frac{3}{2}x - 3$ Standard form =  $\underline{\hspace{2cm}}$



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**Part II – Practice Questions**

1. The area of a rectangle is  $6x^2 - x - 12$  and the width is  $2x - 3$ . Which expression best represents the rectangle's length?

- A.  $4x - 3$
- B.  $4x + 3$
- C.  $3x - 4$
- D.  $3x + 4$

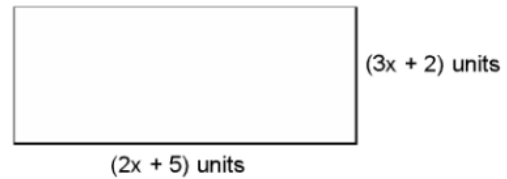
2. The side length of a square is  $4x - 3$ . Which expression best represents the area of the square in simplest terms?

- F.  $16x^2 - 24x + 9$
- G.  $16x^2 - 24x - 9$
- H.  $16x^2 + 24x - 9$
- J.  $16x^2 + 24x + 9$

3. The rate at which a certain radioactive substance decays is modeled by the equation  $y = 32\left(\frac{1}{2}\right)^x$ . This equation represents the relationship between  $x$  the number of hours, and  $y$ , the number of grams of the radioactive substance that remains. How many grams of the substance will remain after 4 hours?

- A. 0.07 g
- B. 2 g
- C. 16 g
- D. 65, 536 g

4. Adrian drew a floor plan of his living room as shown below.



Which expression represents the area of Adrian's living room floor in square units?

- F.  $6x^2 + 19x + 10$
- G.  $6x^2 + 60x + 10$
- H.  $15x + 6$
- J.  $10x + 10$

5. In the equation  $y = 2x^2 - 5x - 3$ , which is a value of  $x$  when  $y = 0$ ?

- A. -4
- B. -3
- C.  $\frac{1}{2}$
- D. 3

6. Factor the expression  $-8x^2 + 22x - 15$ .

- F.  $(2x + 3)(5 - 4x)$
- G.  $(2x - 3)(5 - 4x)$
- H.  $(4x + 5)(2x - 3)$
- J.  $(3 - 2x)(5 - 4x)$

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7. Which of the following is equivalent to  $2x - 3y \geq 9$ ?

F  $y \geq \frac{3}{2}x + 3$

G  $y \leq \frac{2}{3}x - 3$

H  $y \geq \frac{2}{3}x - 3$

J  $y \leq \frac{3}{2}x + 3$

8. A store has  $2x + 3$  items that it sells at  $x + 1$  dollars each. Which expression best represents the total revenue that the store receives after selling all of the items?

F.  $2x^2$

G.  $2x^2 + 3$

H.  $2x^2 + 5x + 3$

J.  $2x^2 + 3x + 4$

9. A quadratic function is given below. What is  $f(4)$ ?

$f(x) = 4x^2 - 2x + 5$

A. 21

B. 61

C. 48

D. 56

10. Which of the following is equivalent to  $15x + 5y = 25$ .

F.  $y = -15x + 25$

G.  $y = -5x + 3$

H.  $y = -3x + 5$

J.  $y = 3x - 5$

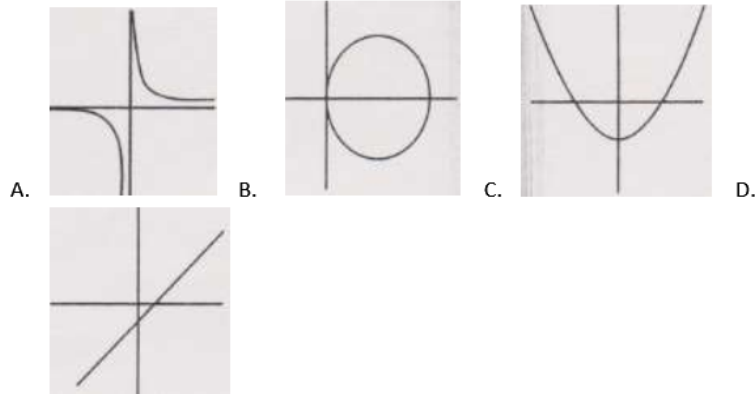
11. Solve the equation  $2a - 6 + 5a = 3a + 10$  for  $a$ .

$\oplus$	$\ominus$	$\ominus$	$\ominus$	$\ominus$	$\ominus$	$\ominus$	$\ominus$
$\ominus$	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd \_\_\_\_\_

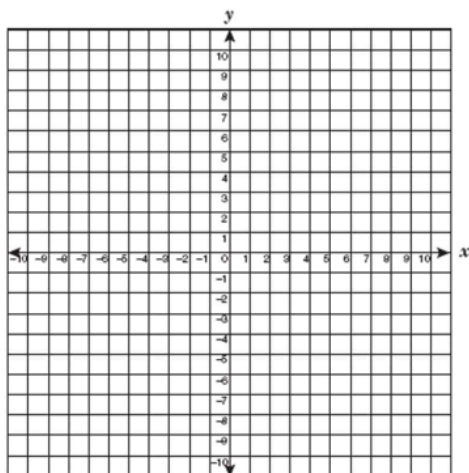
Algebra I Quiz

1. Which below is not a function?

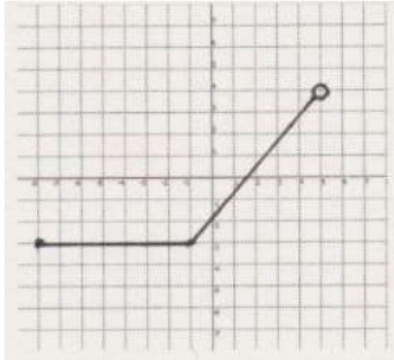


2. When given coordinates  $(0,0)$ ,  $(1,1)$ ,  $(2,4)$ ,  $(3,9)$ , what is the parent function?

- A. Linear
- B. Quadratic
- C. Rational
- D. Absolute Value



Use the following graph to answer #3 and #4.



3. What is the domain of the given graph?
- A. All real numbers
  - B.  $-3 < x < 4$
  - C.  $-8 \leq x < 5$
  - D.  $-8 \leq x \leq 5$
4. What is the range of the given graph?
- A.  $-3 \leq y < 4$
  - B.  $-3 \leq y < 4$
  - C. All real numbers
  - D.  $-8 \leq y < 5$

For #8-#10, record your answer and fill in the bubbles on your answer document.

If  $f(x) = 2x + 7$  evaluate the following:

5.  $f(0)$

9.  $f(-1)$

10.  $f(11)$



Algebra II

Thursday  
September 25, 2014



STAAR Students - Khan Academy  
on computers

TAKS Students - Small Groups





Algebra II  
W.A.C.

Thursday  
September 25, 2014

**A Day**

What is appropriate behavior and  
inappropriate behavior?

**B Day**

What does "Be Confident" mean to you?

