



Algebra II
Warm Up

Monday
September 8, 2014



Define the following:

Independent Variable:

Dependent Variable:



EOC REVIEW Algebra 1

Reporting Category 1

<p><u>Functional Relationships:</u> The student will describe functional relationships in a variety of ways.</p>	<p>Name: _____ Date: _____ Period: _____ Topic: <u>A.1A - Describe independent and dependent quantities in functional relationships.</u></p>
<p>Academic Language</p>	<p>Notes:</p>
<p>Independent Quantity (Variable)</p>	<p>X - ORIGINAL, INITIAL, STARTING, BEGINNING, INPUT</p>
<p>Dependent Quantity (Variable)</p>	<p>Y - NEW, FINAL, TOTAL, ENDING, OUTPUT</p>
<p>Function</p>	<p>$y = 3x + 8$ $f(x) = 3x + 8$</p>
<p>Coefficient</p>	<p>NUMBER IN FRONT OF VARIABLE 3</p>
<p>Constant</p>	<p>NUMBER THAT DOES NOT CHANGE 8</p>
<p>Equation</p>	
<p>Replacement Set</p>	

EOC REVIEW Algebra 1

Reporting Category 1

A.1A	Describe independent and dependent quantities in functional relationships.
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Part I

Determine the dependent and independent quantities in each of the statements.

1. A truck is traveling at a speed of 60 miles per hour. The relationship between the distance traveled, d , and the time traveled, t , is described by the function $d = 60t$.

$y = 60x$

What would be the independent variable? $t = \text{time}$

What would be the dependent variable? $d = \text{distance}$

2. To find c , the total cost of an order of video games from a certain website, the equation $c = 39.99n + 4.99$ can be used, where n represents the number of video games ordered. If c is a function of n , please answer the following:

What is the independent variable? $n = \text{number of video games}$

What is the dependent variable? $C = \text{TOTAL COST}$

What is the coefficient and what does it represent? $39.99 = \text{COST OF GAME}$

What is the constant and what does it represent? $4.99 = \text{COST TAX}$

3. If y is a function of x in the equation $y = \frac{3}{4}x - 7$, indicate whether each of the following statements is true or false.

The independent variable, x , is 7 less than $\frac{3}{4}$ the dependent variable y . F

The independent variable, y , is 7 less than $\frac{3}{4}$ the dependent variable x . F

The dependent variable, y , is 7 less than $\frac{3}{4}$ the independent variable x . T

4. A function is described by the equation $f(x) = 2x^2 - 3$. The replacement set for the independent variable is $\{-3, 0, 2, 5\}$. Calculate the corresponding set for the dependent variable.

Dependent variable corresponding set: _____

$$f(x) = 2x^2 - 3$$

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

$$y = 2(-3)^2 - 3$$

$$2(9) - 3$$

$$18 - 3$$

$$15$$

$$\{-3, 5, 15, 47\}$$

$$\{-3, 0, 2, 5\}$$

$$y = 2(0)^2 - 3$$

$$2(0) - 3 = -3$$

$$y = 2(2)^2 - 3$$

$$2(4) - 3 = 5$$

$$y = 2(5)^2 - 3$$

$$2(25) - 3 = 47$$

EOC REVIEW Algebra 1

Reporting Category 1

5. Walmart had a 50% off sale on electronics during Black Friday.

What would be the independent variable? INITIAL PRICE OF ELECTRONICS

What would be the dependent variable? SALE PRICE

6. The formula for the circumference of a circle is $c = 2\pi r$, where c represents the circumference and r represents the radius of the circle.

What would be the independent variable? $r = \text{RADIUS}$

What would be the dependent variable? $C = \text{CIRCUMFERENCE}$

7. Haydee makes quilts to sell at the county fair for \$50 each. A booth costs \$25 a day. Her daily gross profit is represented by the function $G(q) = 50q - 25$, where q is the number of quilts sold.

What is the independent variable in the function? $q = \text{quilts}$

What is the dependent variable in the function? $G(q) = \text{PROFIT}$

What is the constant? 25

8. Sandy was promoted to lead cashier at McDonald's. The manager gives her a 15% raise. Identify the functional relationship between the original and new salaries.

What would be the independent quantity? ORIGINAL SALARY

What would be the dependent quantity? NEW SALARY

9. To find c , the cost to rent a beach umbrella, the equation $c = 10 + 2h$ can be used, where h represents the number of hours the beach umbrella is rented. If c is a function of h , identify the independent quantity and the dependent quantity.

What would be the independent quantity? $h = \text{HOURS}$

What would be the dependent quantity? $C = \text{COST}$



Algebra II

Tuesday
September 9, 2014

I was out on Tuesday.
Students worked on computers using
KHAN Academy.

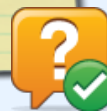




Algebra II
Warm Up

Wednesday
September 10, 2014

I HATE Math
but I LOVE
counting money!!!





Algebra II
Warm Up

Wednesday
September 10, 2014

Frankie works at Chico's Tacos, where he makes \$8.75 an hour. Frankie works 30 hours a week.

1. What would be the independent variable?
2. What would be the dependent variable?
3. How much does Frankie made a week working at Chico's Tacos?



EOC REVIEW Algebra 1

Reporting Category 1

Part II

Practice Questions

1. Hector types at a rate of 40 words per minute. The equation $w = 40m$ describes the relationship between w , the number of words he types, and m , the number of minutes he spends typing. Which statement is true?

- A. The rate at which Hector types depends on the number of minutes he spends typing.
- B. The number of minutes he spends typing depends on the number of words he types.
- C. The number of words he types depends on the number of minutes he spends typing.
- D. The rate at which Hector types depends on the number of words he types.

2. At her job, Mary can wash 8 cars each hour. The relationship between the number of cars she washes, w , and the number of hours spent washing, h , is described by the function $w = 8h$. Which statement is true?

- A. The amount of hours Mary works depends on the number of cars she washes.
- B. The amount of money Mary earns depends on the number of cars she washes.
- C. The number of cars Mary washes depends on the number of hours she works.
- D. The number of cars Mary washes per hour depends on the number of hours she works.

3. The function $h = 3j + 72$ represents the relationship between h , a person's heart rate and j , the number of completed jumping jacks. If h is a function of j , which of the following best describes this relationship?

- F. The value of j is constant in relation to h .
- G. The value of j is dependent on h .
- H. The value of h is constant in relation to j .
- J. The value of h is dependent on j .

4. The area of a triangle is given by the function $A = \frac{1}{2}bh$. Which statement is true?

- A. The area of the triangle depends on the product of the base and the height divided by 2.
- C. The area of the triangle depends on the product of the base and the height multiplied by 2.
- H. The area of the triangle depends on the product of the base and the height divided by $\frac{1}{2}$.
- J. The area of the triangle depends on the product of the base and the height.

EOC REVIEW Algebra 1

Reporting Category 1

5. Purchasing a car in Texas requires paying up to 8.25% in sales tax. Other fees may be added as well, such as licensing, shipping, and so on. Which of the following is considered to be the dependent variable when calculating the price of the car?

- A. The final cost of the car after taxes and fees
 B. The cost of the car before taxes and fees
 C. The sales tax
 D. The fees imposed upon the price of the car

6. Raul pays a \$10 membership fee to a gym each month, plus \$2 per visitor he brings with him to the gym. If c is the total amount Raul spends at the gym, and v is the number of visitors he brings, the relationship between the two variables is $c = 10 + 2v$. Which statement is true?

- A. The monthly fee is the only independent variable
 B. The number of visitors depends on the total cost
 C. The cost is the dependent variable.
 D. The number of visitors depends on the monthly fee

7. An ice-cream vendor made a table showing the relationship between the daily high temperature and the number of ice-cream cones sold per day. What is the dependent quantity in this relationship?

- A. The daily high temperature
 B. The number of ice-cream cones sold per day
 C. All of the data in the table
 D. Cannot be determined

8. Consider the equation $y = 3x + 4$. Which of the following statements is true?

- $y = mx + b$
- F. The value of y is dependent on the slope.
 G. The value of y is dependent on the value of x .
 H. The value of y is independent of any of the values in the rest of the equation.
 I. The y -intercept changes with respect to the slope of the equation.

9. For a car traveling at a speed of 65 miles per hour, the relationship between the distance traveled, d , and the time traveled, t , is described by the function $d = 65t$. Which statement is true?

- A. The speed of the car depends on the distance traveled.
 B. The speed of the car depends on the time traveled.
 C. The distance traveled depends on the time traveled.
 D. The time traveled depends on the distance traveled.

10. A department store had a 20%-off sale on all clothing items. Which statement best represents the functional relationship between the sale price of an article of clothing and the original price?

- A. The original price is dependent on the sale price.
 B. The sale price is dependent on the original price.
 C. The sale price and the original price are independent of each other.
 D. The relationship cannot be determined.



Algebra II
Warm Up

Thursday
September 11, 2014

It's not that I'm so
smart; it's just
that I stay with
problems longer.

~Albert Einstein





Algebra II Warm Up

Thursday
September 11, 2014

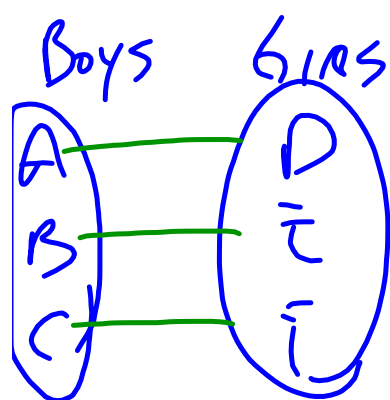
What is a Function?

$y = mx + b$
Formula

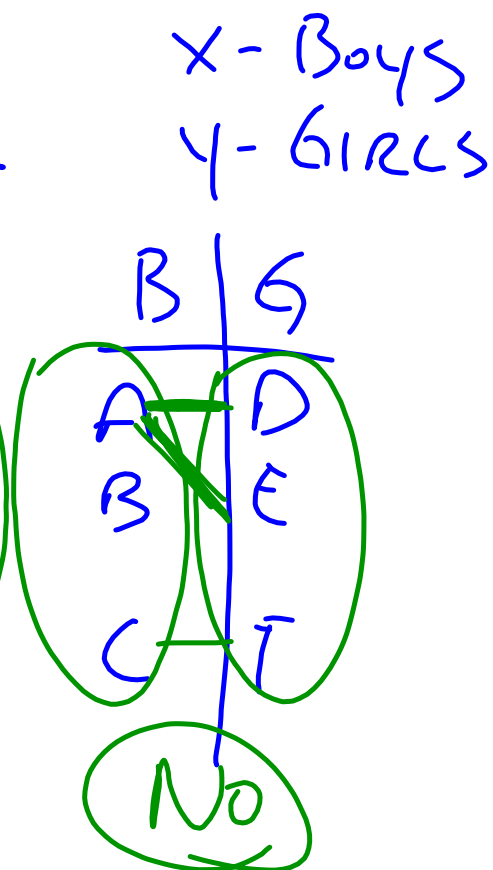
INDEPENDENT
DEPENDENT

INPUT \rightarrow OUTPUT





FUNCTION



X	Y
-2	2
-1	4
0	6
1	8
2	10

YES

X	Y
-3	2
2	4
7	6
2	8
-3	10

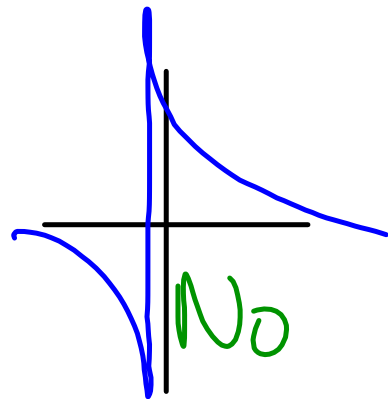
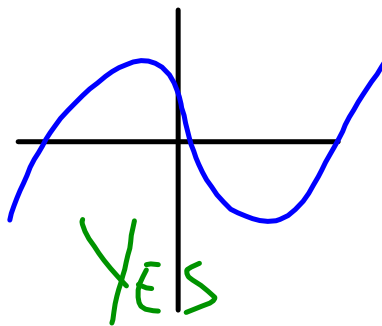
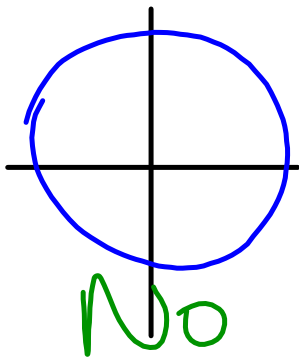
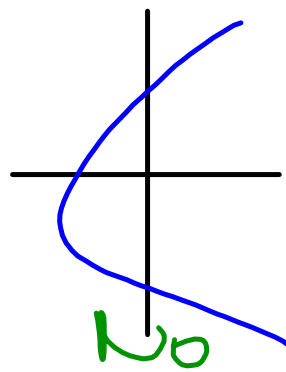
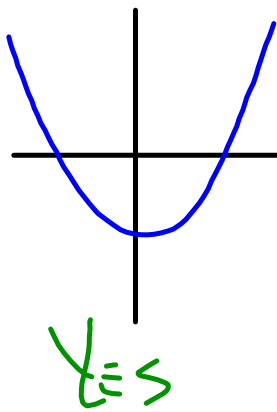
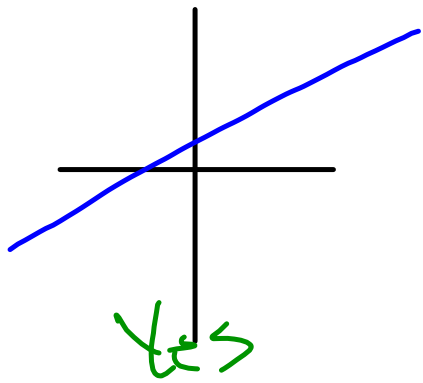
NO

X	Y
-2	3
-1	3
0	3
1	3
2	3

$$\text{YES } \{(-3, 1), (-2, 2), (-1, 3)\}$$

$$\text{No } \{(-2, 0), (-1, 2), (-2, 4)\}$$

$$\text{No } \{(-2, 2), (-1, 3), (0, 4), (-1, 4)\}$$



$$y = 1 \quad \checkmark \quad \text{HORIZONTAL LINE}$$

$$y = x \quad \checkmark$$

$$y = 3x + 4 \quad \checkmark$$

$$y = 2x^3 + 3x + 4 \quad \checkmark$$

$$x = 3 \quad \text{VERTICAL LINE} \quad \times$$



Algebra II

Thursday
September 11, 2014

Today's Agenda:

- Properties of Functions
- Work on Vocabulary using computers
- Writing Across the Curriculum



EOC REVIEW Algebra 1

Reporting Category 1

A.1B

Determining Functional Relationships from Data Sets

Part I

1. Fernando made a table showing the amount of money he earned, y , based on the number of fruitcakes he sold at a back sale, x . Write an equation that would best represent the relationship between x and y .

Number of fruitcakes sold (x)	Dollars earned (y)
2	8
4	16
6	24
8	32
10	40

Equation:

2. Write an equation that will generate the following tables of values.

x	y
3	12
4	14
5	16
6	18
7	20
8	22

x	$f(x)$
2	-4
4	-3
6	-2
8	-1
10	0
12	1

EOC REVIEW Algebra 1

Reporting Category 1

3. Phillip borrowed money from his best friend so he could buy a used motorcycle. The table shows the remaining balance, b , of Phillip's loan after each payment. Write a function that can describe this relationship.

Number of payments, p	Loan balance, b
1	4275
2	4100
3	3925
4	3750
5	3575
6	3400

Function:

4. The table shows the number of slices of pepperoni placed on each size of pizza at Peter Piper Pizza. Let r represent the radius of the pizza and let n represent the number of slices of pepperoni. Write an equation that best represents the relationship between the radius and the number of slices of pepperoni.

Size of Pizza	Radius of Pizza (inches)	Number of Pepperoni Slices
Single	2	5
Small	4	17
Medium	5	26
Large	8	65
Extra Large	10	101

Equation:

5. Determine if the following data sets represent a function.

 $\{(-1,0), (1,1), (3,2), (4, 2\frac{1}{2})\}$

_____ 

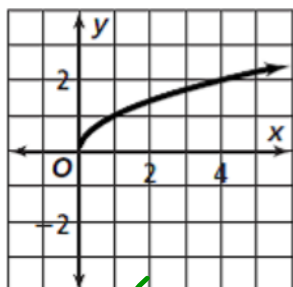
 $\{(2,2), (3,3), (6,5), (3,1)\}$

_____ 

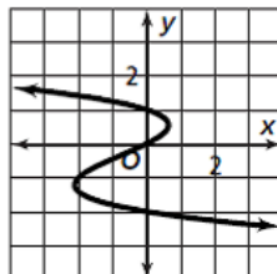
EOC REVIEW Algebra 1

Reporting Category 1

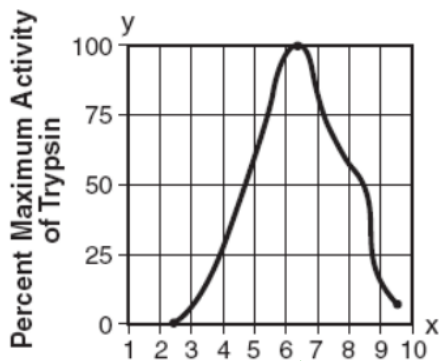
6. Determine if the following graphs represent a function.



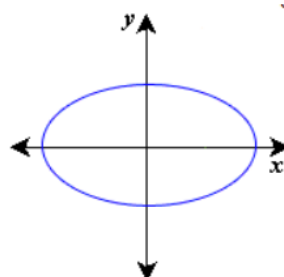
✓



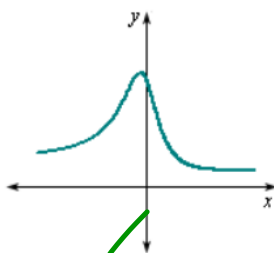
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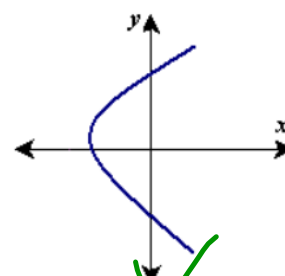
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✗



✓



✗

EOC REVIEW Algebra 1

Reporting Category 1

Part II Practice TAKS Questions

1. Juan recorded how many minutes it took him to get home, y , based on the number of miles he traveled, x .

Distance Traveled (miles), x	Time Spent Traveling (minutes), y
1	9
2	13
4	21
6	29

Which equation best represents the relationship between x and y ?

A. $y = 9x$

B. $y = 6.5x$

C. $y = x^2 + 5$

D. $y = 4x + 5$

2. El Paso Country Club offers a weekly golf membership that includes an initiation fee and monthly fee. The cost based on number of months played is shown in the table below.

Months (m)	Cost (C)
2	\$840
5	\$1275
8	\$1710
12	\$2290

Which function can be used to describe this relationship?

A. $C = 420m$

B. $C = 500 + 170m$

C. $C = 500 + 220m$

D. $C = 550 + 145m$

3. Jazmine is putting money into her savings account every 2 weeks so that she can buy a computer. The table below illustrates the balance after each deposit.

Number of Deposits (d)	Balance (b)
1	\$690
2	\$780
3	\$870
4	\$960
5	\$1050

Which function can be used to describe this relationship?

F. $b = 650 + 40d$

G. $b = 500 + 190d$

H. $b = 600 + 90d$

J. $b + 90d = 600$

4. Which equation best describes the relationship between the corresponding values of x and y shown in the table?

x	y
-2	-9
0	-1
1	3
4	15

F. $y = x + 8$

G. $y = x^2 - 1$

H. $y = 4x - 1$

J. $y = 2x - 5$

EOC REVIEW Algebra 1

Reporting Category 1

5. Which equation could be used to generate this table of values?

x	y
-1	3
0	2
1	3
2	6

- A. $y = -3x$
- B. $y = x - 1$
- C. $y = x^2 + 2$
- D. $y = x + 1$

6. The table below shows the relationship between n, the number of gallons of gasoline, and d, distance traveled.

Miles Driven	
Number of Gallons, x	Distance Traveled, y (miles)
2	46
4	92
6	138
8	184
10	230

Which equation can be used to describe this relationship?

- A. $y = x + 23$
- B. $y = \frac{x}{23}$
- C. $y = 23x^2$
- D. $y = 23x$

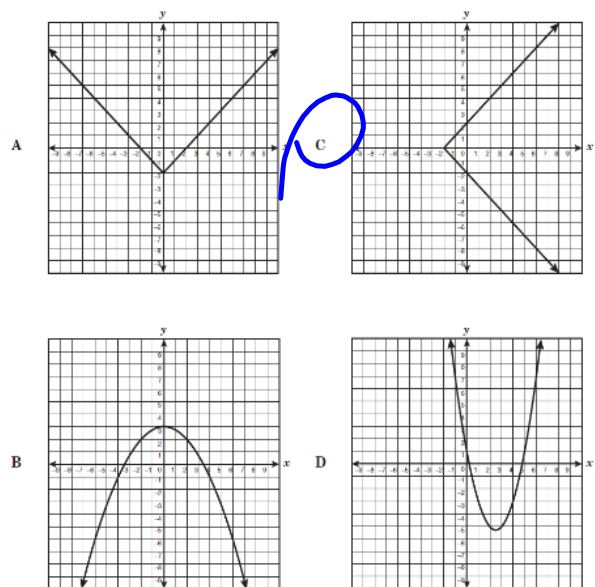
7. The table below shows the relationship between n, the number of pounds of dog food and d, the number of dogs boarded at Pat's Pets.

Dog Food	
Number of dogs, x	Pounds of Dog Food Ordered, y
10	36
12	42
14	48
16	54

Which equation best represents the relationship between the number of dogs boarded, x, and the number of pounds of dog food ordered, y?

- A. $y = 3x + 6$
- B. $y = x + 6$
- C. $y = 6x$
- D. $y = x + 3$

8. Which of the following graphs does not represent y as a function of x?



EOC REVIEW Algebra 1

Reporting Category 1

9. The table below shows, h , the approximate height of an Ameri-Willow tree after t years.

Age of Ameri-Willow (years)	Height of Ameri-Willow (feet)
1	8
3	25
6	49
7	57
9	70

Which equation best fits these data?

- F $h = 8.2 + 3.75t$
- G $h = 1.12 + 7.82t$
- H $h = 7.5 + 0.65t$
- J $h = -1.24 + 9.75t$

10. Which of the following equations best represents the relationship in the set of data shown below?

x	-4	-3	-1	2	4
y	24	17	9	12	24

- A $y = -7x - 4$
- B $y = \frac{3}{2}x^2$
- C $y = -5x + 4$
- D $y = x^2 + 8$



Algebra II

Thursday
September 11, 2014

Computer Time: page 6

Log onto computers

Mr. Diaz website Quizlet

search Mr. Diaz Chapin Math

Assignment: STAAR EOC Algebra 1 Vocabulary



EOC REVIEW Algebra 1

Reporting Category 1

<p><i>Functional Relationships:</i> The student will describe functional relationships in a variety of ways</p>	<p>Name: _____</p> <p>Date: _____</p> <p>Period: _____</p> <p>Topic: <u>A.1B – Gather and record data sets to determine functional relationships between quantities.</u></p>
Academic Language	Notes:
Function	
Relation	
Equation	
Table of Values	
Coordinate Pair	
Vertical Line Test	



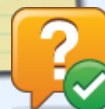
Writing Across the Curriculum


A Day

When will you know you have achieved success?

B Day


What is your dream career and what will it take to actually achieve it?





Algebra II

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$$4 \times 4 + 4 \times 4 + 4 - 4 \times 4 = ?$$
