Using the X and Y axis with DATA!!! NAME_____

Accelerated 7th Grade Math

There are many other names that people use to refer to the x and y values. List any that you know...

<u>x-values</u>   <u>y-values</u>

When looking at a set of data that you want to graph, how do you decide which variable goes on the x axis and which goes on the y-axis?

Example:

Your boss has asked you to make a graph that helps him calculate how much money he owes you based upon the amount of hours you work. What are the two variables to be graphed here?

    1. _____   2. _____

    Which goes on the x axis? _____

    Which goes on the y axis? _____

_____

Domain and Range

Domain and range are words that also refer to the x and y variable in a situation.

    Define Domain:

    Define Range:

Example: Referring back the example above, tell what the domain and range would be.

    Domain:_____   Range: _____

Now Try These....

1. You are working on a school fund raiser involving t-shirt sales. You are asked to post a graph to illustrate the number of t-shirts that have been sold and the amount of money that has been made. There are 400 shirts to sell and they are $10 each.

    Domain: _____   Range: _____

2. The student council is sponsored a dance last month. You were asked to create a graph to illustrate the amount of money that was made and the number of students that attended the dance. You are going to be using this graph to report out at the meeting. There are 500 students in the school and entrance costs $5.

    Domain: _____   Range: _____

3. You babysit for your neighbors and get paid hourly. You are paid $6 per hour and they will be gone for no longer than 5 hours.

    Domain: _____   Range: _____

4. You work at the local library and were assigned a task to keep track of the number of people that visit the library each hour.   You need to create a graph to illustrate your findings.

    Domain: _____   Range: _____

Recognizing Functions

A function is a relationship in which each value of the independent (control) variable determines exactly one value of the dependent variable.

Vertical Line Test: A graph with the independent variable on the horizontal axis represents a function if no vertical line meets the graph in more than one place.
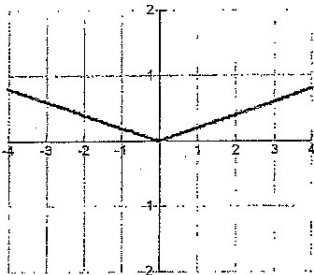
No two points lie on the same vertical line
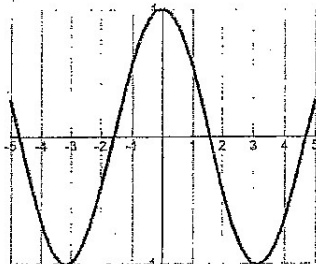
This graph represents a function
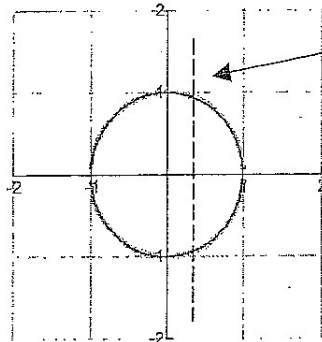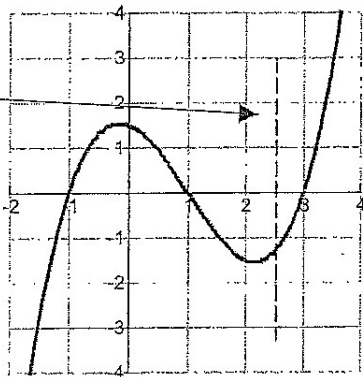
Two points lie on the same vertical line

This graph **does not** represent a function

Tell whether each graph represents a function when x is the independent variable. **Explain how you know.**
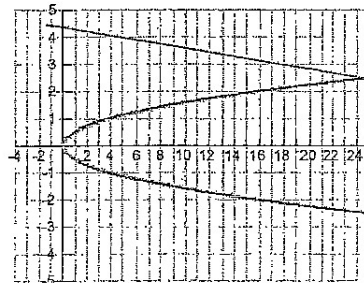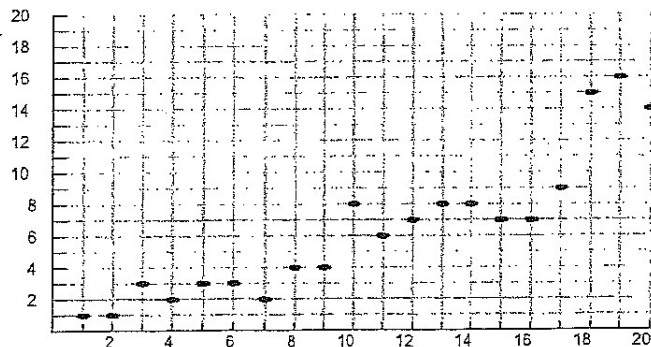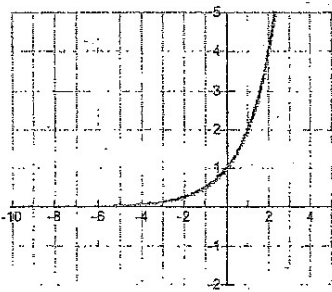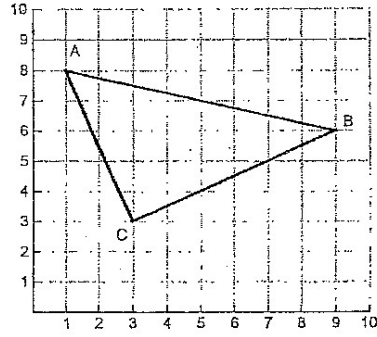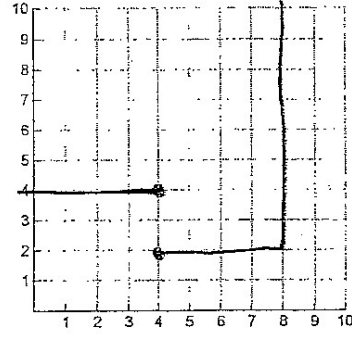
1.

2.

3.

4. Could this graph be represented with a function?

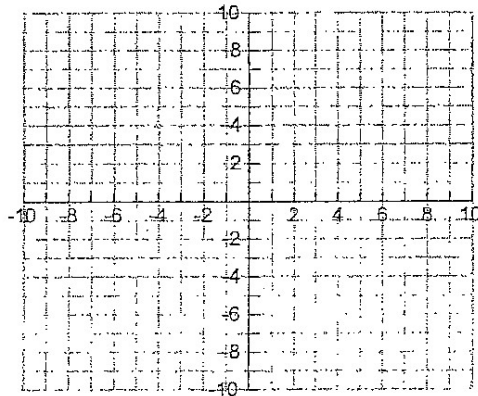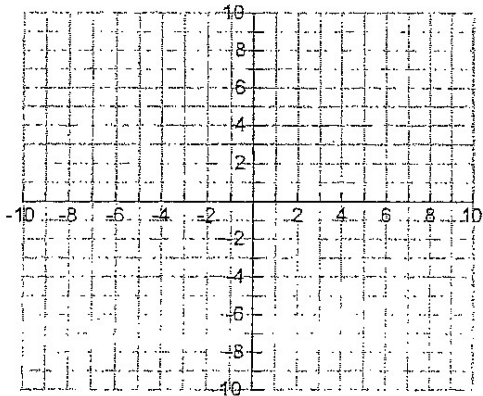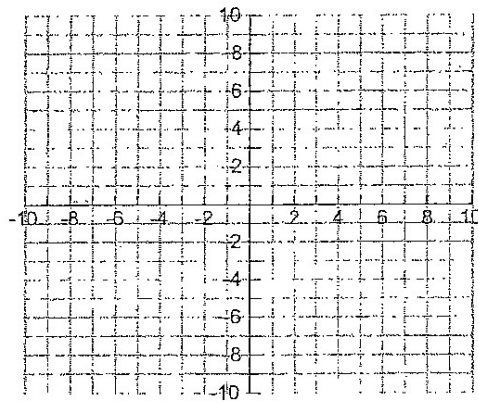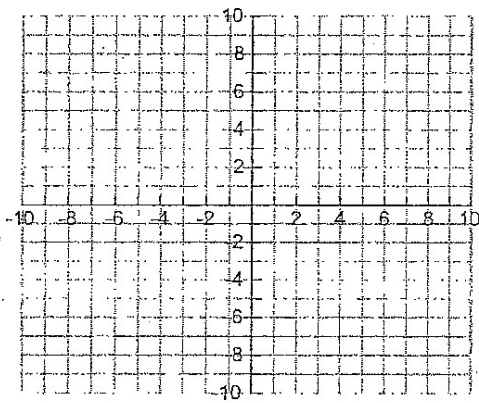5.   6.   7.

Draw two graphs that are functions and two graphs that are not functions. Explain below how you know each of the graphs can be represented by a function or not.

Function Graphs	**Non-Function Graphs**

Integrated 1   Name_____

Function or Not?

For questions 1-6, tell whether each graph is a function. If it is not, circle the area of the graph that doesn't comply with the definition of "function".

1.

2.

3.

4.

5.

6.
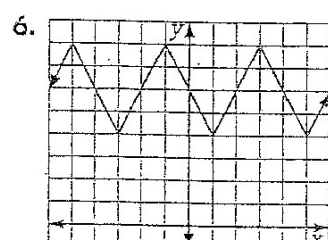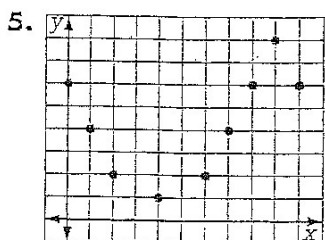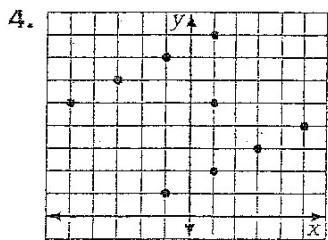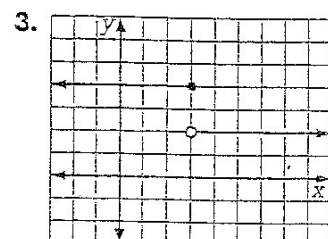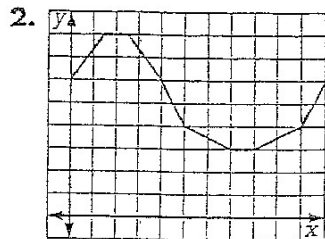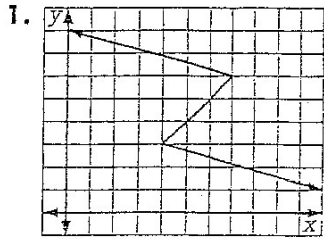
7. Use the table to make a graph of the data and then answer the questions.

Average Height in Inches for Girls

Height	Age
29	1
33	2
36	3
39	4
41	5
44	6
47	7
50	8
52	9
54	10

a. What is the control variable?   What is the dependant variable?

b. Is this a function?   Why or why not?

c. According to this graph, approximately how tall is an 11 year old girl?

For 8-10, identify the control and the dependant variables. State function or not function.
Be ready to explain all answers. (You may sketch a graph to help you.)

8. On average, it take Barney 6 minutes to run a mile. He charts his distance in miles and time in minutes for 36 minutes.

Control: Dependant:

Is this a function?

9. Chrisy keeps track of the number of points she earns on her math homework for the entire month of September. So far, she is doing well (max amount of points possible is 5)

9-2-02	9-4-02	9-5-02	9-10-02	9-12-02	9-13-02	9-16-02	9-17-02
4	5	3	5	4	0	4	5

Control: Dependant:

Is this a function?

10. Joe believes that the number of students that sleep during class is directly related to what subject is being taught. In order to test out this conjecture, Joe walks around the building and records the type of class and number of sleeping students.

Eng.	Math	SS	Span	Germ	SS	Math	Math	Wood	Eng	Gym
3	0	4	5	2	3	1	4	0	3	0

Control: Dependant:

Is this a function?

Practice with Functions

Name:_____

Accelerated 7th Grade Math

Sketch a graph of the relation shown in each table. Use the vertical line test to determine if the relation is a function.

1)

x	y
-6	-5
-3	-2
0	-2
1	0
4	3
5	7

2)

x	y
-7	4
-2	6
-1	-1
-1	3
0	5
1	5

3)

x	y
-5	4
-4	4
-3	4
0	0
1	4
2	4

Is each relation a function? Explain.

4)   Is the time you take to go to the library a function of the distance to the library?

5)   Is the price of a one-year subscription to your favorite magazine a function of the age of the subscriber?

6)   Is the price of a piece of cloth a function of the length of the cloth?

7)   Is the number of students on a field trip a function of the number of busses used?

Identify the independent and dependent quantity in each situation.

8) The cost of a long-distance phone call increases, with the number of minutes of the call.

9) Water pressure increases 0.44 pounds per square inch with each increase of one foot in depth below sea level.

Identify the independent and dependent quantity in each situation, and find reasonable domain and range values.

10) Tara's car travels about 25 miles on one gallon of gas. She has between 10 and 12 gallons of gas in the tank.

11) Sal and three friends plan to bowl one or two games each. Each game costs $2.50.

12) a) The weight of books carried in a backpack depends on the number of books in the backpack. Susan's books weigh from 1 pound up to 3.5 pounds each and she carries at most 4 books each.

    b) Can non-integer numbers be part of the domain? Of the range? Explain.