

Final Review

Units 8 & 9

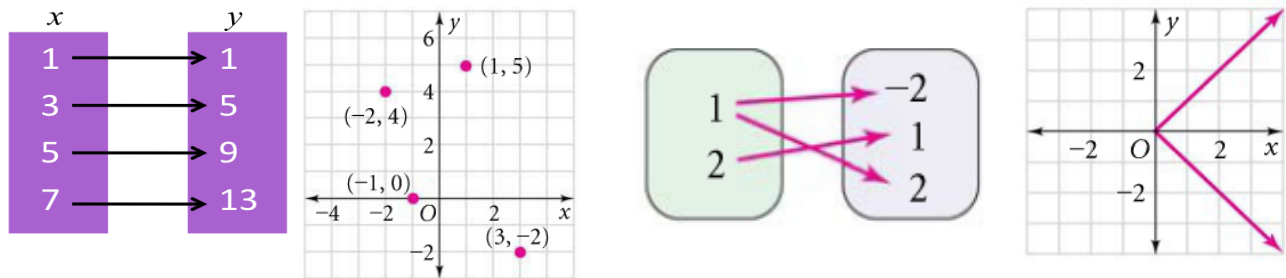
I. Relations & Functions

A relation is a set of ordered pairs. Relations can be classified as the following:

- _____ a function
 - repeating x-values
- _____ function
 - no repeating x-values, points form a line
- _____ function
 - no repeating x-values, points do not form a line

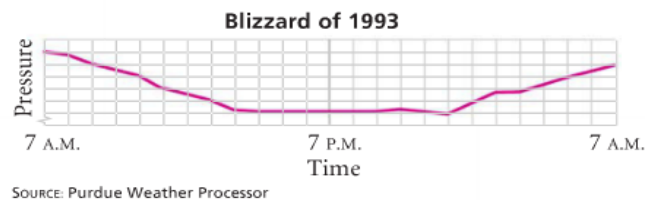
*The _____ test can be used to check if graphs of relations are functions or not.

* Examples: Linear function, non-linear function, or not a function?



II. Interpreting Function Graphs

* **Example:** **Weather** The graph shows the barometric pressure in Pittsburgh, Pennsylvania, during a blizzard. Describe what happened to the pressure during the storm.



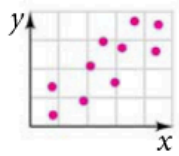
III. Writing Function Rules

- Function rules are written in $y=mx$ or $y=mx+b$ form.
 - Initial value is "b"
 - Rate of change/ unit cost is "m"

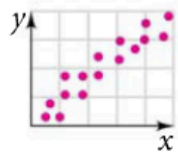
* **Example:** To join the "Shoe Love" club, there is a \$25.00 fee to join and it then costs \$40.00 per pair of shoes. Write a function rule that describes this situation.

IV. Scatter Plots

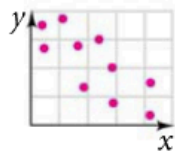
A **scatter plot** is a graph that relates two different sets of data by plotting the data as ordered pairs. You can use a scatter plot to determine a relationship between the data sets.



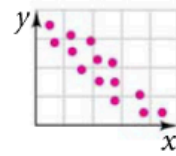
Weak,
positive
correlation



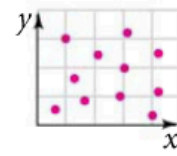
Strong,
positive
correlation



Weak,
negative
correlation

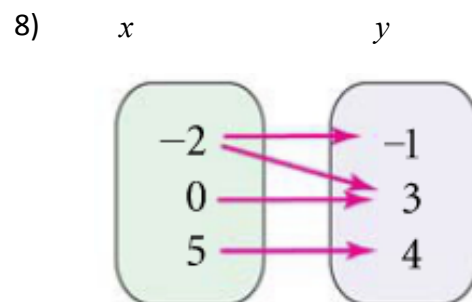
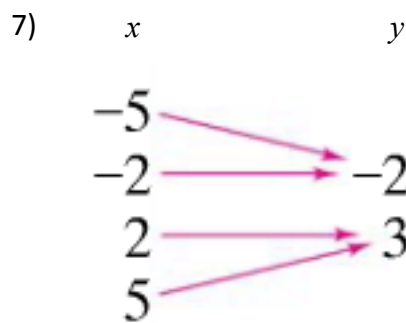
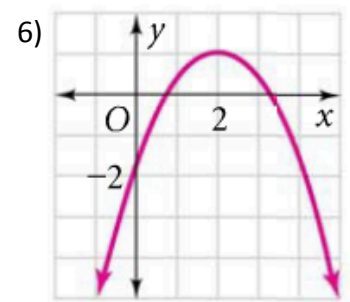
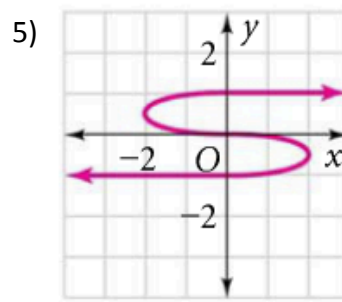
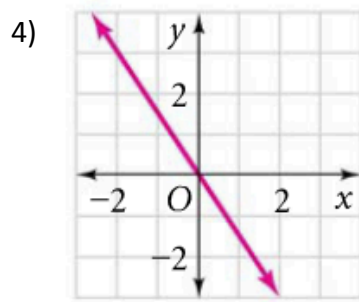
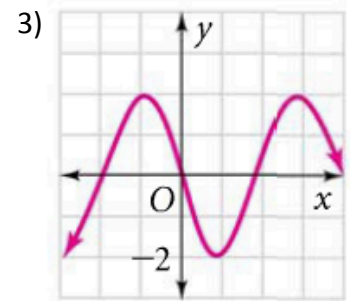
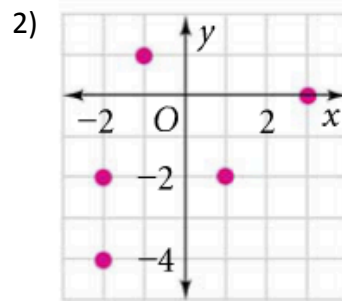
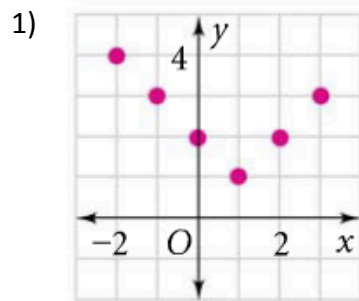


Strong,
negative
correlation



No
correlation

Directions: Determine if the following relations are functions. If the relations are functions, then determine if the functions are linear or non-linear.



9) $\{(0,1), (1, 2), (2, 3), (3, 4), (4, 5)\}$

10) $\{(-5,1), (-5, 4), (-4, 3), (3, 4), (4, 5)\}$

11)

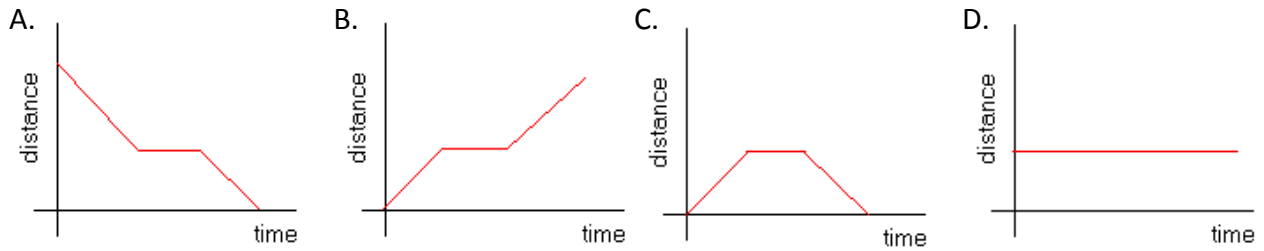
x	y
3	-1
2	-1
-4	0
2	4

12)

x	y
-5	-5
-3	-3
1	1
2	2

Directions: Match the correct graph to each of the following situations that shows Peter's distance from home.

13)



Situation 1: Peter left his aunt's house to drive home and drove at a constant speed for two hours. He then stopped for an hour to eat. He finally finished his drive home at a constant speed.

Situation 2: Peter was at his aunt's house all day.

Situation 3: Peter drove at a constant speed for a few hours, stopped to meet his friend for lunch, then drove back home at a constant speed.

Situation 4: Peter left his house to drive to his aunt's house and drove at a constant speed for two hours. He then stopped for an hour to eat. He finally finished his drive to his aunt's house at a constant speed.

Directions: Write a function rule to represent the cost of two scoops of ice cream and toppings at each place, then use those function rules to answer the question.

- 14) The Dairy Swirl, the Custard Shack, and Sadie's Shakes all sell ice cream. Dairy Swirl charges \$3.00 for two scoops of ice cream and then \$0.50 for every topping, the Custard Shack charges \$3.50 for two scoops of ice cream and \$0.25 for every topping, and Sadie's Scoops charges \$2.00 for two scoops of ice cream and \$1.00 for every topping. Cooper plans on getting ice cream with four different toppings, which place should he go to buy ice cream?

Dairy Swirl:

Custard Shack:

Sadie's Scoops:

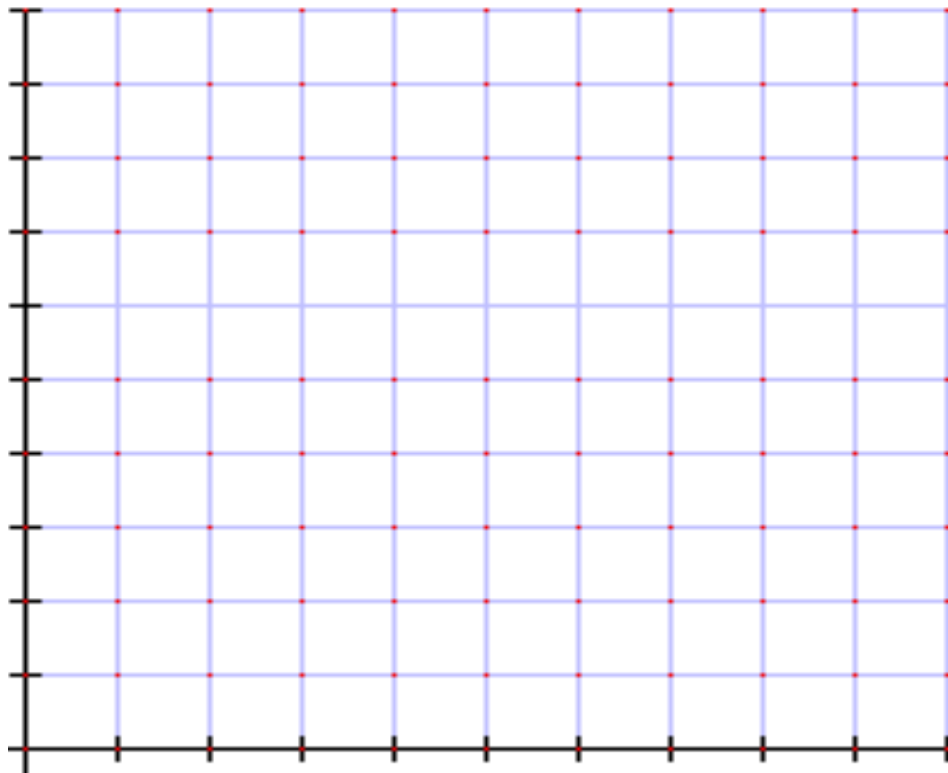
Directions: For each of the following,

- a. Make a scatter plot with the given data.
- b. Determine whether there is a positive, negative, or no correlation.
- c. Draw a trend line and write its' equation.
- d. Use the equation you wrote to answer the given question.

15) The table below gives data on the distance a golf ball travels versus the speed with which the club head hit it.

Club Head Speed (mph)	100	102	103	101	105	100	99	105
Distance (in yards)	257	264	274	266	277	263	258	275

a.



b.

c.

e. If a golf ball is hit 300 yards, use your equation to predict the speed at which the club head hit it.