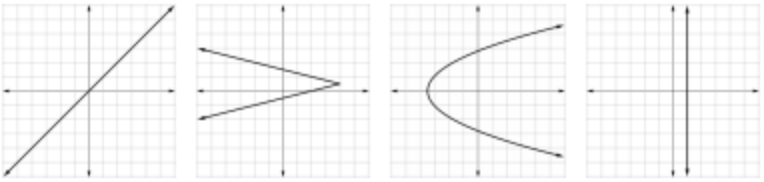
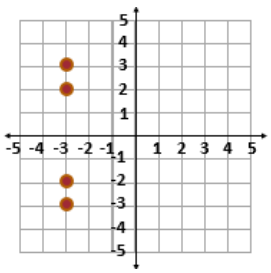
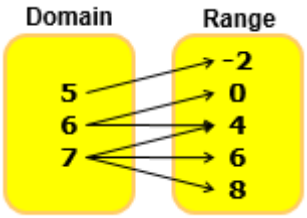
Introduction to Functions – Review **Name _____**

Algebra I **Date _____ Period _____**

1) Determine if each of the following relations is a function.







{ (0, 0), (3, 5), (2, 9), (5, 6), (4, 4) }

Describe when a relation is not a function.

2) Sketch a graph to represent each situation. Be sure to label each axis.

a) Hours of daylight each day over the course of the year.

b) your distance from the ground as you ride a Ferris wheel.

c) your pulse rate as you watch a scary movie.

3) What are the variables in each graph? Describe how the variables are related to each other.

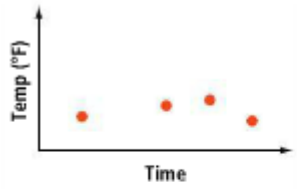
5.

6.

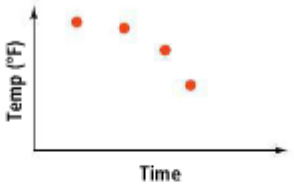
7.

4) Match each graph with its related table. Explain your answers.

8.



9.



10.

A.

Time	Temperature (°F)
1 P.M.	91°
3 P.M.	89°
5 P.M.	81°
7 P.M.	64°

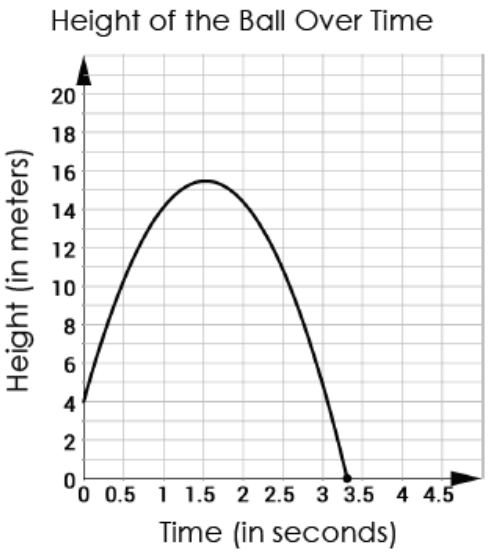
B.

Time	Temperature (°F)
1 P.M.	61°
3 P.M.	60°
5 P.M.	59°
7 P.M.	58°

C.

Time	Temperature (°F)
1 P.M.	24°
3 P.M.	26°
5 P.M.	27°
7 P.M.	21°

5) The graph to the represents the height of a ball over time.



a) What is the independent variable?

b) What is the dependent variable?

c) What is the height of the ball after 1 second?

d) What does the x-intercept represent in this case?

e) What is the initial height of the ball?

f) Estimate the maximum height of the ball.

g) When will the ball be 10 meters off of the ground?

h) Is the relationship linear or non-linear?

For each problem on this page, use the following five functions:

$a(x) = x - 2$	$c(x) = -3x - 2$	$e(x) = -x^2 + 3x - 1$
$b(x) = 2x^2 + 3x - 4$	$d(x) = 6x - 5$	

I. Evaluate each function at the given value.

6) $a(-2)$ 7) $b(-2) + e(1)$ 8) $a(b(4))$

II. Perform the following operations using the same functions listed above.

9) $c(x) + b(x)$ 10) $e(x) - d(x)$ 11) $a(x) + c(x) - e(x)$

11) $5b(x)$ 12) $b(x) + 2c(x)$ 13) $a(x) \cdot d(x)$

14) $c(x) \cdot b(x)$ 15) $e(x) \cdot b(x)$ 16) $2a(x) + b(x) \cdot d(x)$

17) The area of the shaded portion is $L(x) \cdot W(x) - N(x) \cdot M(x)$. Find the area.