Name _____ Due Date _____ Period _____

Unit 10 Review: Comparisons

You MUST trade this review for a test in order to take it the day the test administered.

For each of the following find the average rate of change for the indicated values:

1) The table shows the value of a car t years after it was purchased. Find the average rate of change for the value of the car from 2 to 6 years.	2) Jane's walk is recorded in the graph below. What is her average rate of change for the interval 2 to 4 seconds.

1) The table shows the value of a car t years after it was purchased. Find the average rate of change for the value of the car from 2 to 6 years.

Years t	Value $f(t)$
0	25,000
2	16,000
4	10,240
6	6,553.60

2) Jane's walk is recorded in the graph below. What is her average rate of change for the interval 2 to 4 seconds.

Jane's Walk
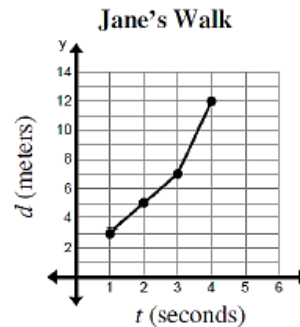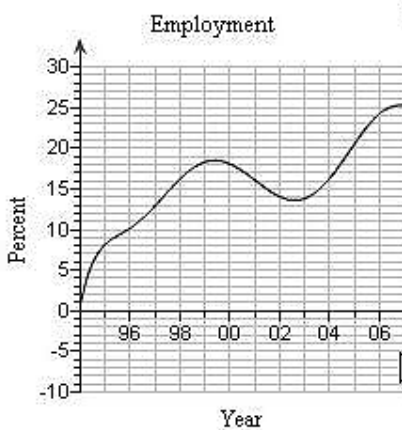
3) Find the average rate of change for the graph below for t=7 to t=10
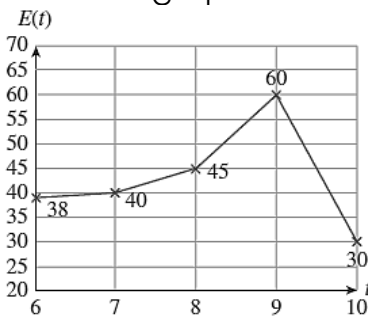
4) The following table shows the number of people with email access in millions. Find the average rate of change from 1990 to 2001.

Years since 1990	7	8	10	11	12
People with email access (millions)	62	130	251	313	382

5) The following shows employment rates of a neighborhood in New York in reference to the year (ie. 96 means 1996) Find the average % from the year 2000 to 2006

Employment

6) The following shows the speed limit according to which hour you are going on a trip. Find the average rate of change for the indicated hours below.
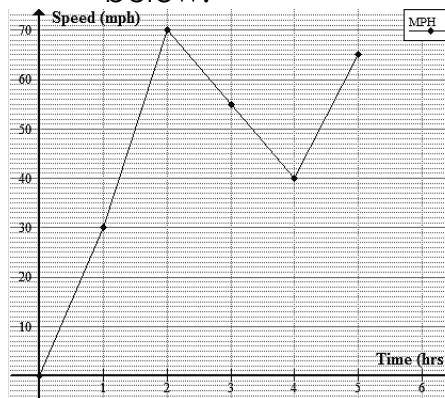
a. From hours 1 to 4
b. From hours 0 to 2
c. From hours 2 to 6

For each of the following give the inequality to represent where $f(x)$ is greater than $g(x)$ and when $g(x)$ is greater than $f(x)$.

7)

8) Fill in the tables below using the given functions: $f(x) = \frac{7}{2}x$ and $g(x) = 2^x - 1$.

X	f(x)
0	
1	
2	
3	
4	
5	

X	g(x)
0	
1	
2	
3	
4	
5	

Change your calculator window to [-5,5] x [0,10]. Graph the functions on a calculator using Y1 and Y2. Use the graph or tables to identify the intervals where the specified function is greater.

9) $f(x) = 3^x$ and $g(x) = 4x + 1$. When is the value of g(x) greater than f(x)?

10) $f(x) = 2^x - 1$ and $g(x) = 4x + 16$ when is the value of g(x) greater than $f(x)$?

Use the following information to compare the two exponential functions.

11) News of an outbreak of a new strain of the swine flu is spreading quickly. In South Jordan the number of people who have heard the news can be modeled by the function: $S(x) = 832(1.3)^x$ where x is the number of hours since 7:00 am. In West Jordan initially 636 people heard the news and the number of people have been increasing by 56% each hour since 7:00 am.

a. Which city starts with more people knowing at 7:00 am?

b. Which city has the larger growth rate?

c. If both cities have the same population of 500,000 how long will it take each city to discover the news?