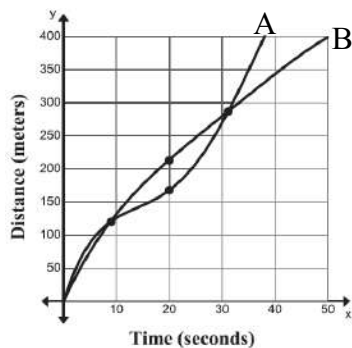Name: _____ Date: _____

Rate of Change Practice

1. Below is the graph and table for 2 runners running the 400 meter hurdles race.

Time	Runner A	Runner B
0	0	0
9	120	120
20	168	213
31	287	287

   a)   Which runner has a faster average speed for the first 9 seconds?

   b)   Which runner has a faster average speed from 9 to 20 seconds?

   c)   Which runner has a faster average speed from 20 to 31 seconds?

   d)   Which runner has a faster average speed from 9 to 31 seconds?

   e)   Which runner wins the race? How do you know?

2. The graph below shows the United States population from 1900 to 2010, as recorded by the U.S. Census Bureau.

   a)   What was the rate of change in the population from 1900 to 2000? Is this greater or less than the rate of change in the population from 2000 to 2010?

   b)   Which 10-year time periods have the highest and the lowest rates of change? How did you find these?

3. Find the rate of change of Pete's height from 3 to 5 years.

Time (years)	1	2	3	4	5	6
Height(in.)	27	35	37	42	45	49

4. For $f(x) = -6x - 2$, find the rate of change on the interval [-2, 4].

x	f(x)
0	4
1	8
2	12
3	16
4	20

5. You and a friend are trying to decide which theater to go to for a Friday night movie. NCG charges $7 for the movie ticket and $3 per food item. Regal's prices are represented by the table.

Write an equation for NCG and Regal. Compare their rates of change and initial cost.

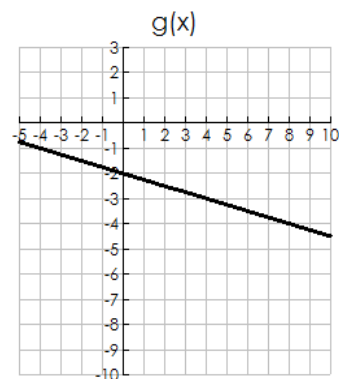**NCG:**   **Regal:**

Which theater is cheaper if you want to see the movie and also get a drink and popcorn?

6. For the following two functions, write the equations of each and complete the chart using <, >, or = to compare them.

g(x)

f(x) =

g(x) =

x	f(x)
-3	11
-1	7
1	3
3	-1
5	-5

Characteristic of f(x)	<, >, or =	Characteristic of g(x)
y-intercept of f(x) =		y-intercept of g(x) =
f(4) =		g(4) =
Rate of Change of f(x) =		Rate of Change of g(x) =