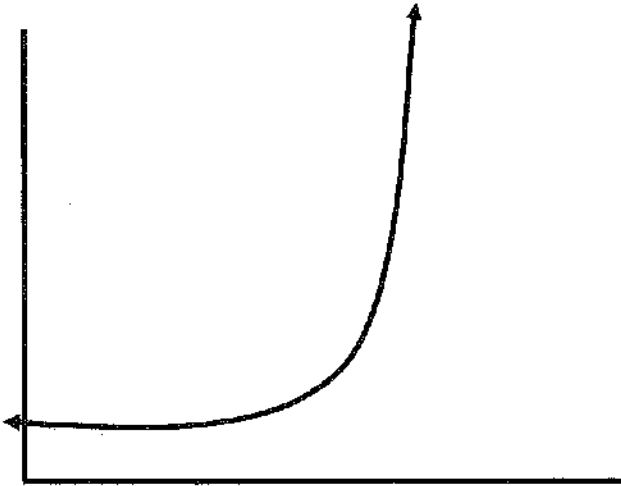# COLLABORATIVE ACTIVITY

Name of Assessment Task:

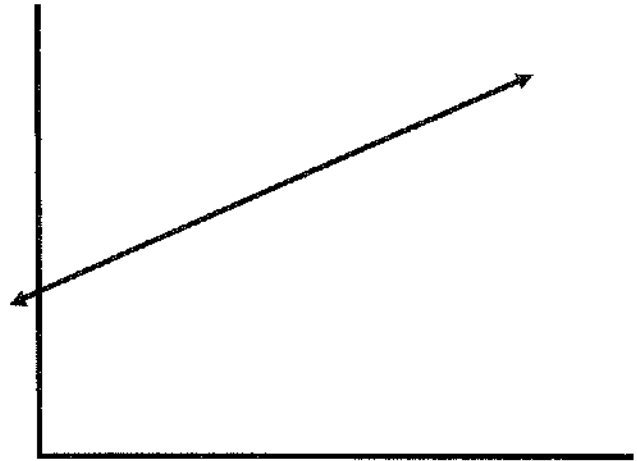| Card Set A: (Verbal)		
A1. The population of Waycross in 2009 is 14,200. The population has dropped by 4% since 2000.	**A2.** The purchase price of a new car is $18,000. The value of the car depreciates yearly by 12%.	**A3.** A mouse population of 14,200 is increasing in size at a rate of 4% per year.
A4. The value of a certain stock is $18,000 and is growing annually at a rate of 12%.	**A5.** A mechanic charges $40 per hour plus a flat rate of $25.	**A6.** The temperature was 25° and it dropped 40° every 30 minutes.
A7. Mary had n dollars in the bank and spends m dollars per week on CD's.	**A8.** Mom pays Mary n dollars each semester to keep her room clean and m dollars per A on her report card.	**A9.** Mary's hometown is experiencing a yearly population growth of n%. The original population is m.
A10. The price of oil is m per barrel. Because of low demand, the price has decreased n% per week.		

Card Set B (Modeling Function)

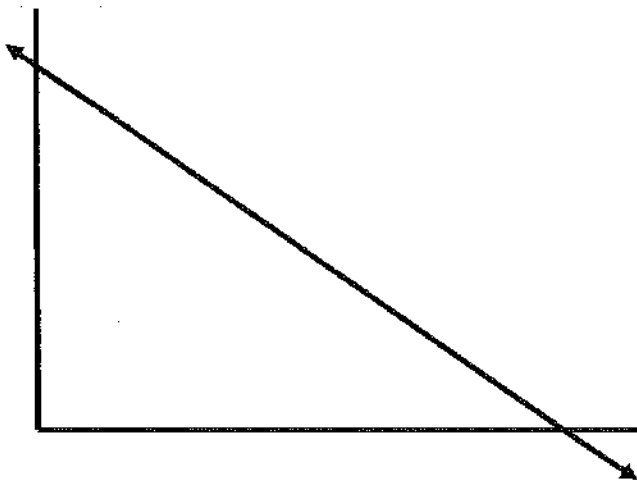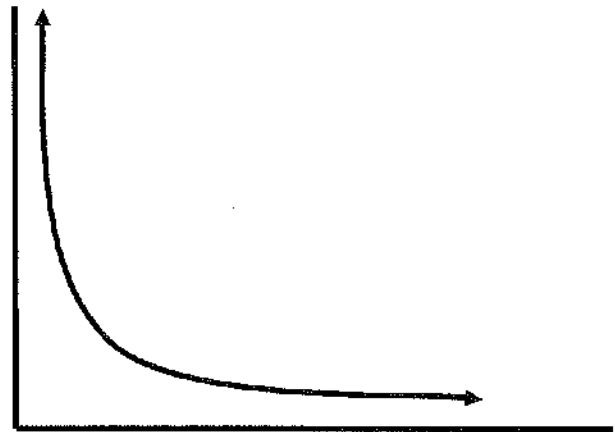| B1. $y = 40x + 25$	B2. $y = -40x + 25$
B3. $y = 14{,}200(.96)^t$	B4. $y = 14{,}200(1.04)^t$
B5. $y = 18{,}000(.88)^t$	B6. $y = 18{,}000(1.12)^t$
B7. $y = mx + n$	B8. $y = -mx + n$
B9. $y = m\left(1 - \frac{n}{100}\right)^t$	B10. $y = m\left(1 + \frac{n}{100}\right)^t$

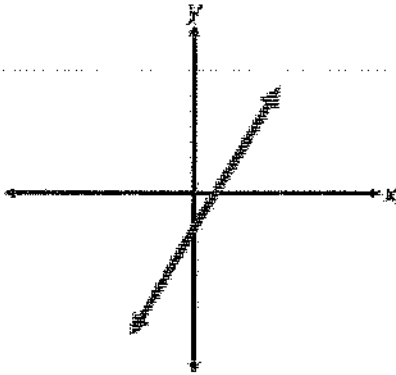# Card Set C (Possible Graphs)

C1

C2

C3

C4

Collaborative Activity Instructions:

1) You have been grouped in pairs.

2) You are given card sets A (verbal situations) and B (modeling functions), already cut apart.

3) Read each situation carefully. You and your partner should match each situation from card set A with a modeling function from card set B. Discuss to ensure that you both agree.

4) Once you are sure that you have completed the matching correctly and you are instructed to do so, take out card set C. Match card set C to card sets A & B previously matched. Note, more than one set of matched A&B cards will be used with each graph in set C.

5) On the construction paper provided, glue or tape the matching sets down (grouped under card set C). Be sure to explain in writing your reasoning.
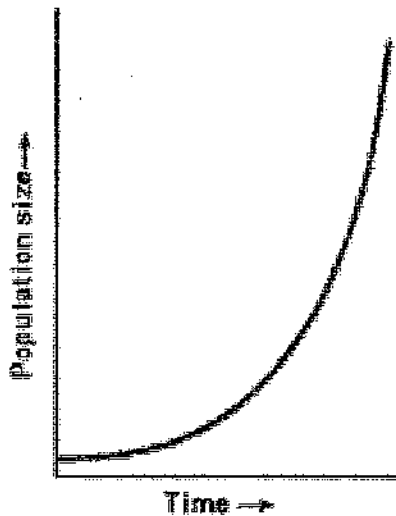
Linear   Real-world Situation: Hourly Wage

Possible Equation: _____

Exponential   Real-World Situation: Population increasing over time.

Possible Equation: _____

Collaborative Activity (Answer Key)

A1	B3	C4
A2	B5	C4
A3	B4	C1
A4	B6	C1
A5	B1	C2
A6	B2	C3
A7	B8	C3
A8	B7	C2
A9	B10	C1
A10	B9	C4