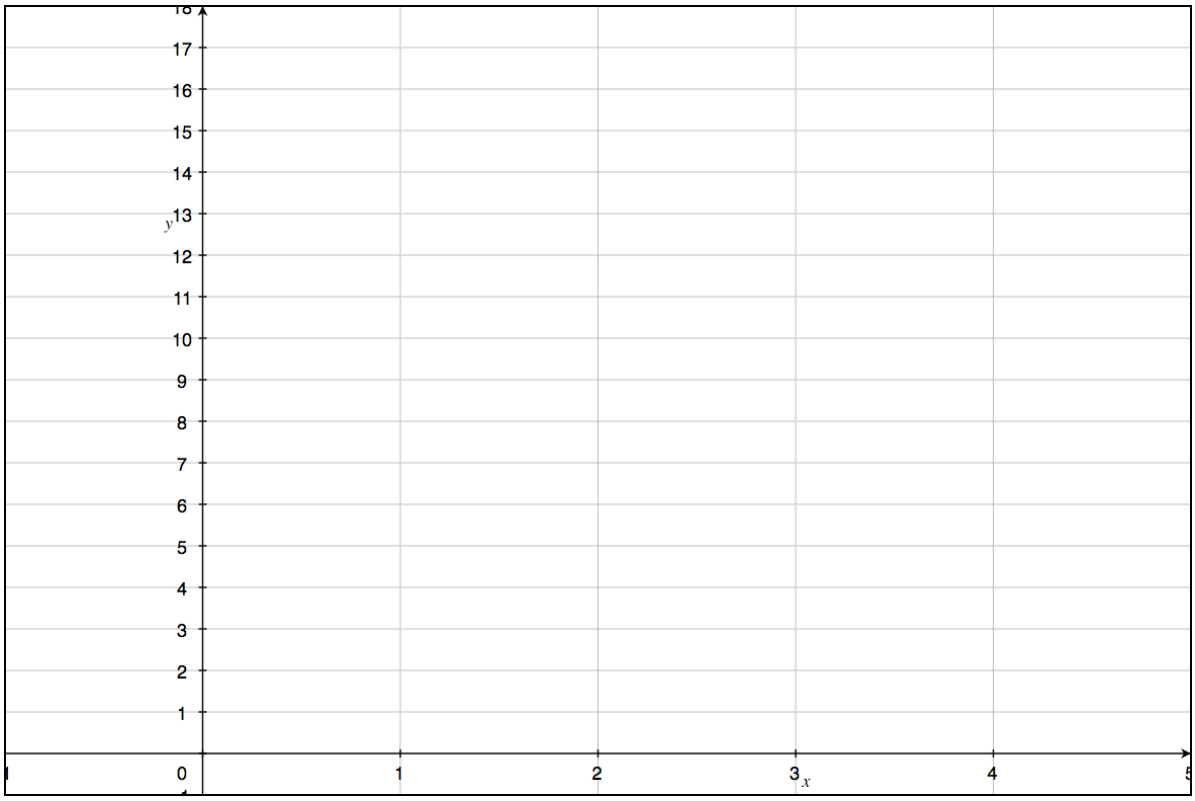
Precalc Warm Up – 9/9/10

Name:_____ Block:_____

1) Sketch a graph that represents the following verbal model.

The longer a student does math the more productive he gets. In the first hour a student works he can solve 1 problem. In the second hour, he can solve an additional 3 problems. In the third hour he can complete an additional 5 problems. In the fourth hour, he can complete an additional 7 problems. Graph the **<u>total number</u>** of problems the student completes depending on how many hours he works.



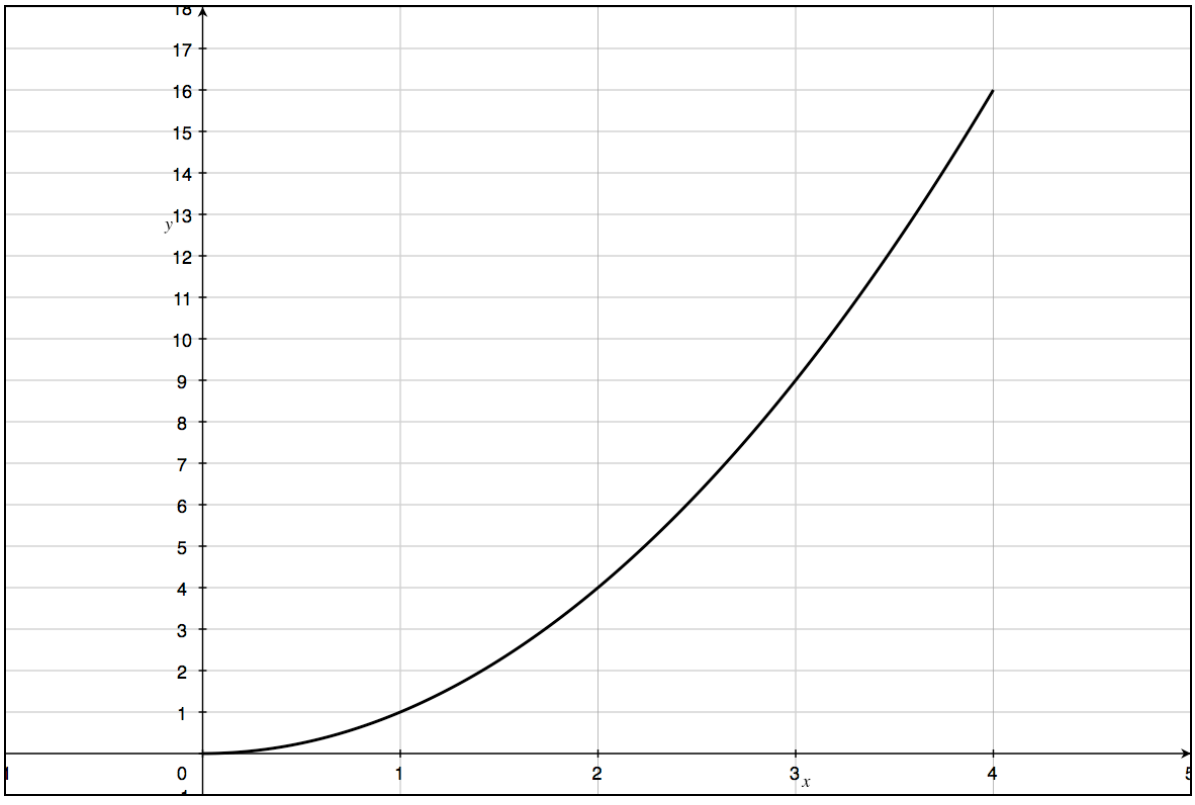
Average Rate of Change
PROBLEM SOLVER

Name:_____Date:_____Period:_____

Concept – Students will be able to find the average rate of change given the graph of a nonlinear function.

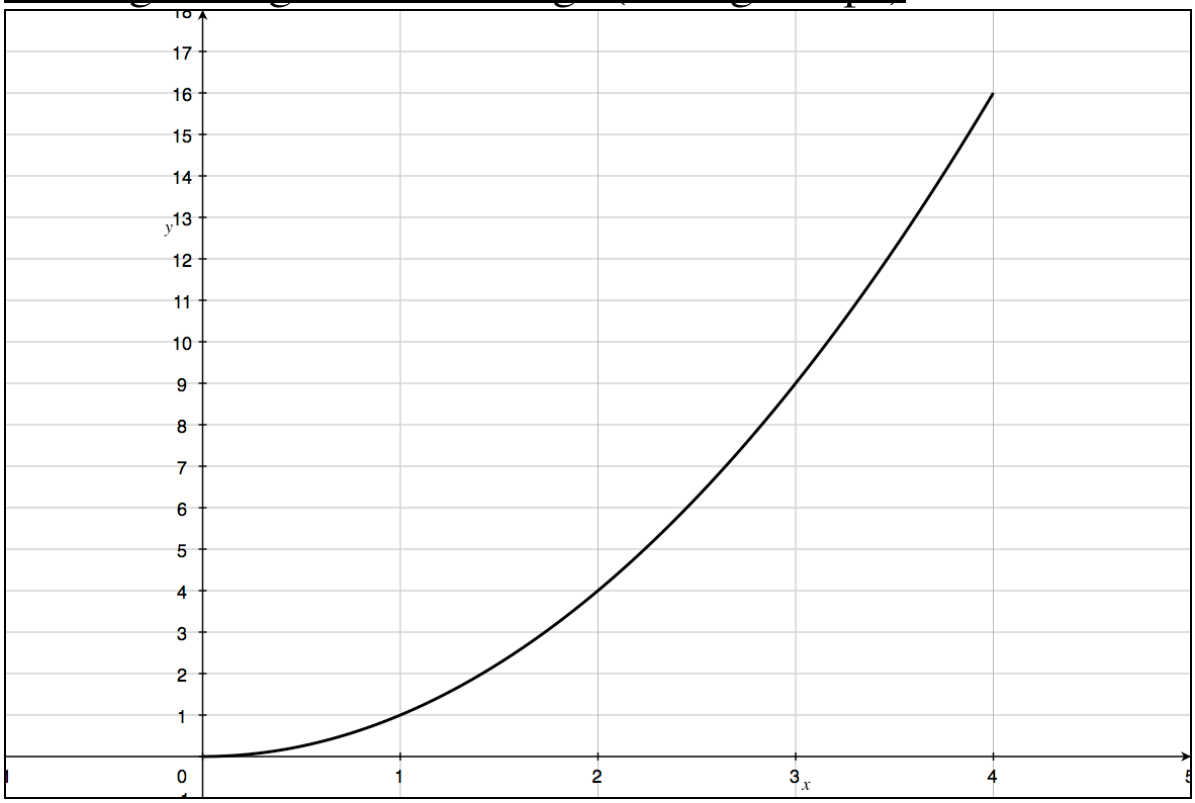
Consider the model and graph from the do now:

The longer a student does math the more productive he gets. In the first hour a student works he can solve 1 problem. In the second hour, he can solve an additional 3 problems. In the third hour he can complete an additional 5 problems. In the fourth hour, he can complete an additional 7 problems. Graph the **<u>total number</u>** of problems the student completes depending on how many hours he works.



What is the average number of problems that the student completes per hour?

Finding average rate of change (average slope)

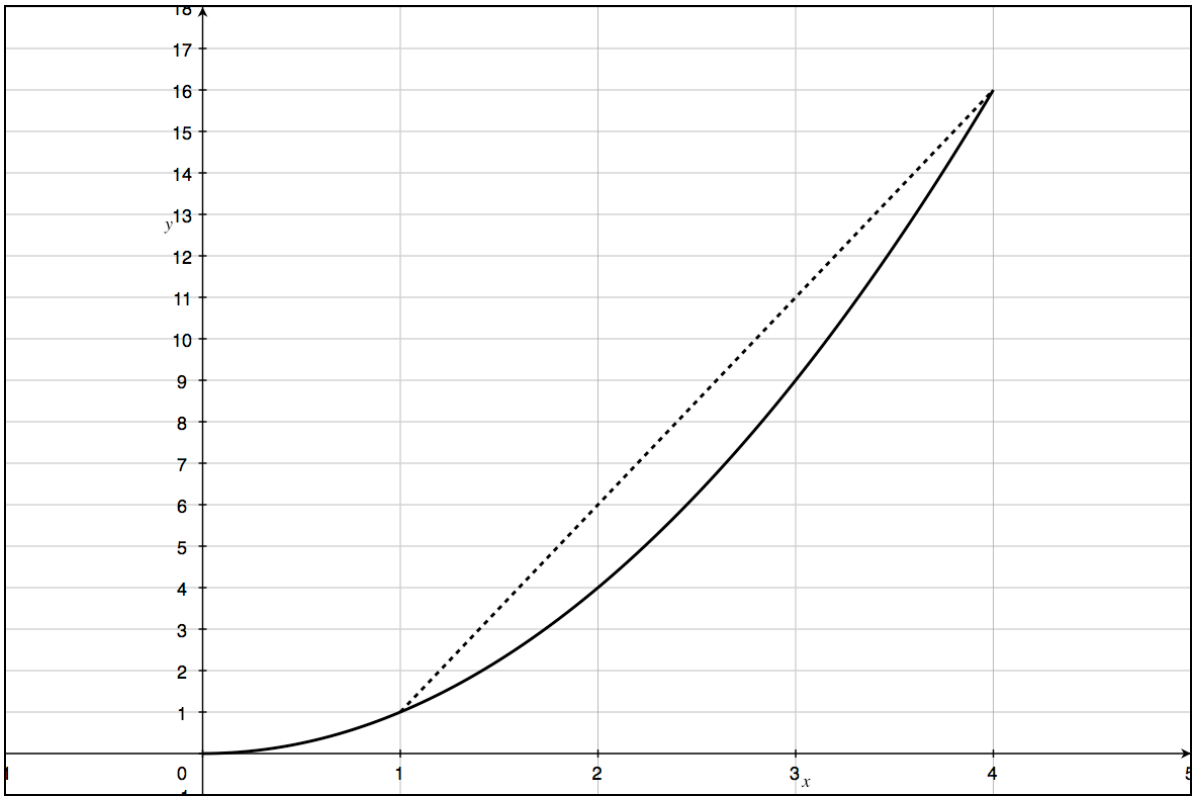


Find the average rate of change of problems solved between x=0 and x=4.

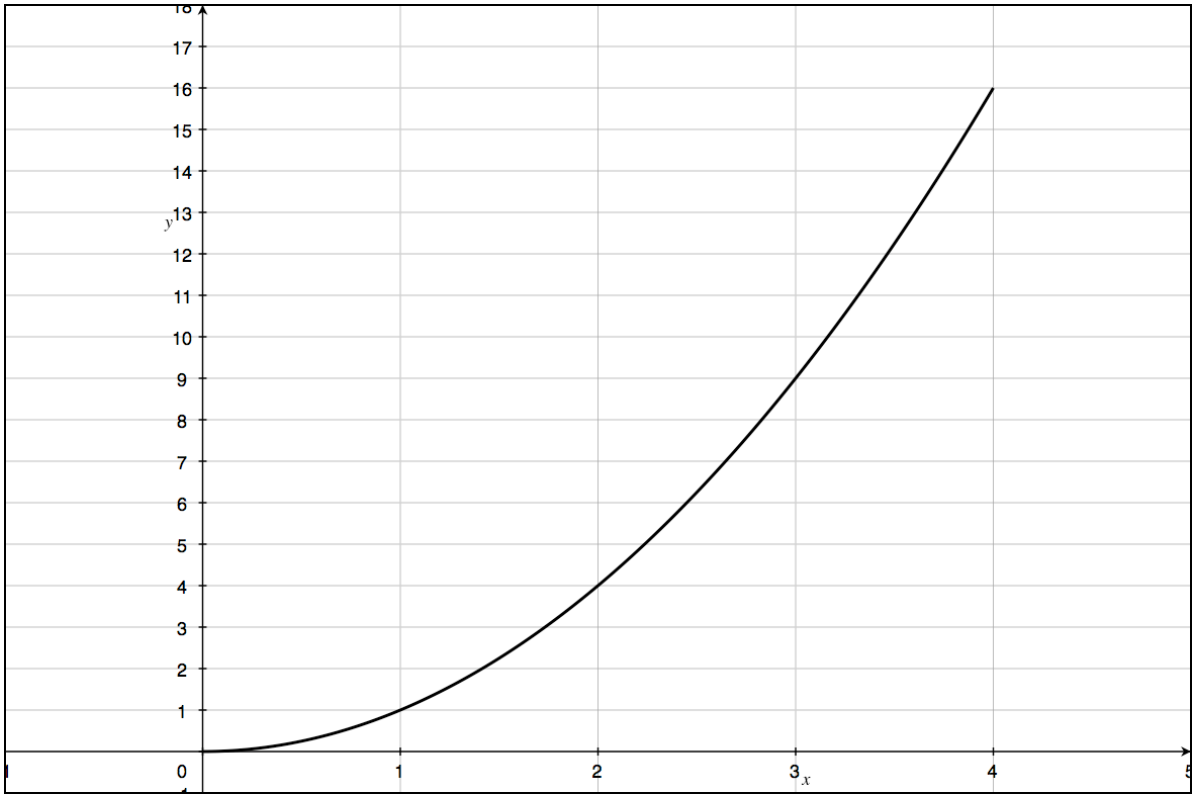
Change in y:

Change in x:

FOR ME ONLY

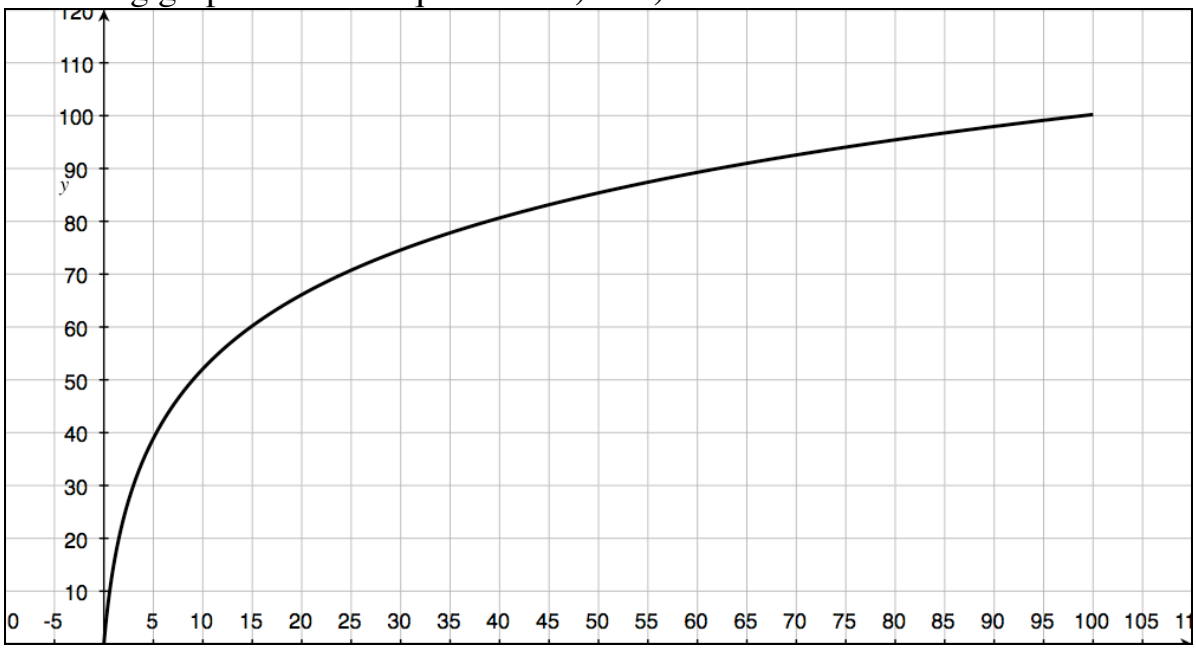


In your pairs, find the average rate of change of the following graph from x=1 to x=4



PRACTICE

The following graph represents the distance a person runs in 100 seconds. The x-axis is measured in seconds and the y-axis is measured in meters. Use the following graph to answer questions 1) to 4)



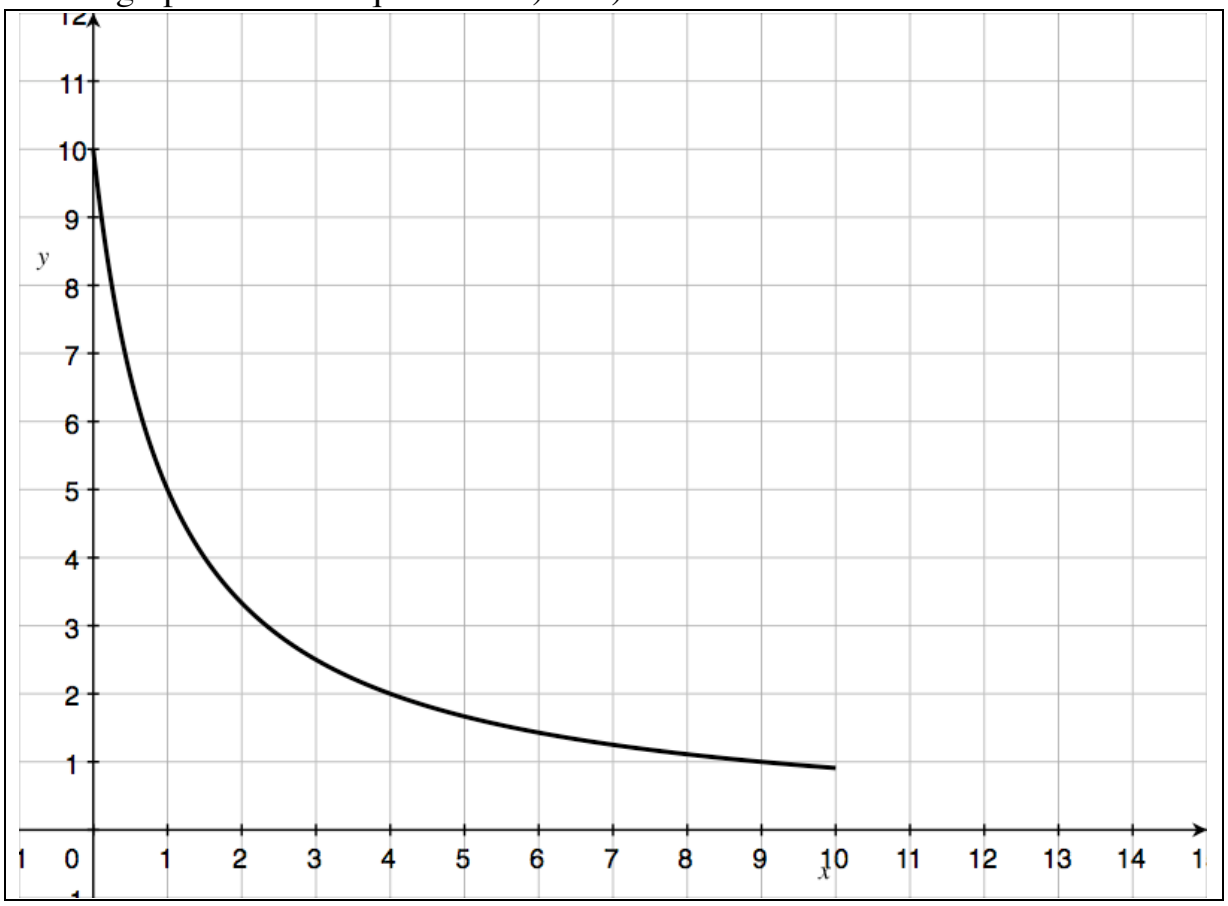
1) Is the distance the person is traveling increasing, decreasing or neither?

2) Find the average rate of change for x=0 to x=40 and be sure to include the proper units.

3) Find the average rate of change for x=5 to x=20 and be sure to include the proper units.

4) Find the average rate of change for x=20 to x=40 nd be sure to include the proper units.

You are selling candy and keep track of how many you have left at the end of each sales day. The following graph represents the number of boxes of candy you have at the end of each day. The y-axis is measured in boxes of candy and the x-axis is measured in days. You begin with 10 boxes of candy on day 0 and have only one box left on day 10. Use the graph to answer questions 1) to 3)



1) Is the number of boxes of candy that you have increasing, decreasing or neither?

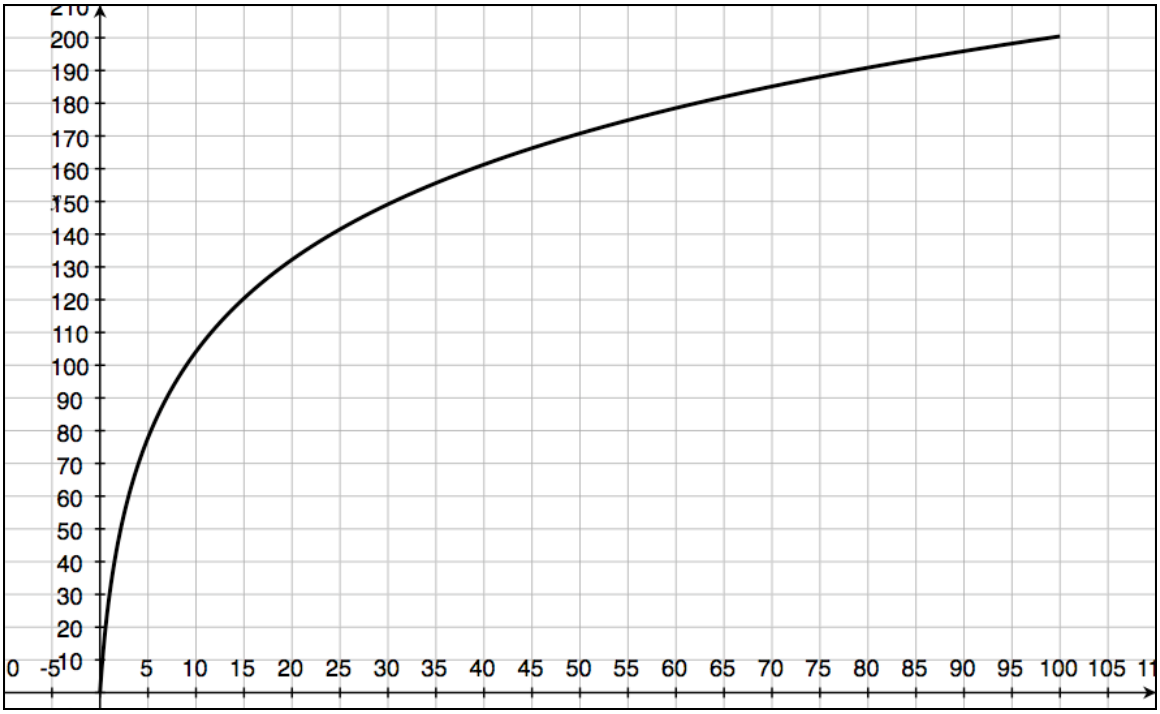
2) Find the average rate of change for x=1 to x=5 and include proper units.

3) Find the average rate of change for x=5 to x=10 and include proper units.

Precalc – Exit Slip – 9/9/10

Name:_____ Period:_____

1) Consider the following graph of the number of students checked at the front gate versus time (in minutes). Use it to answer the following questions. Be sure to include proper units if appropriate.



a. Is the function increasing, decreasing or neither?

b. What is the average rate of students checked per minute at the gate between $t = 0$ and $t = 100$?

c. What is the average rate of students checked per minute at the gate between $t = 0$ and $t = 30$?

d. Is the rate of students checked greater on the interval $[0,100]$ or the interval $[0,30]$?