

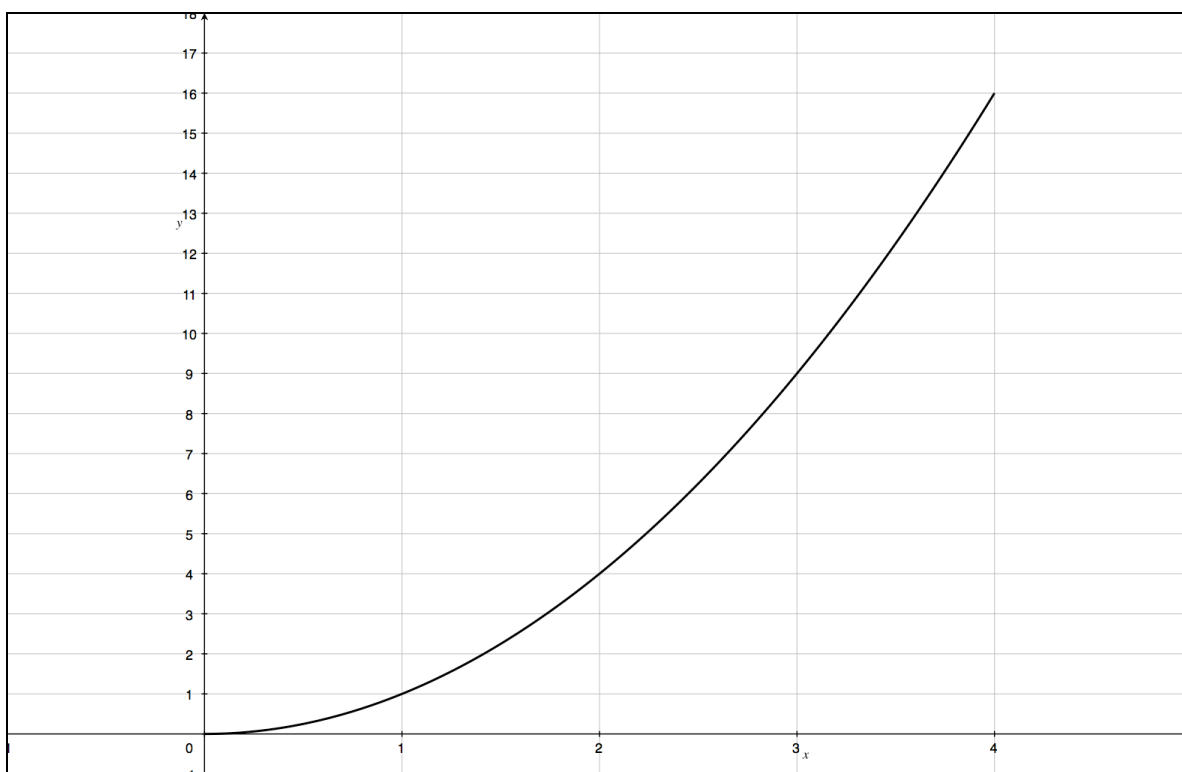
# Precalc Warm Up – 9/10/10

Name: \_\_\_\_\_

Block: \_\_\_\_\_

1) Consider the model and graph from yesterday's Warm Up.

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. You graph the **total number** of problems the student completes depending on how many hours he works.



Calculate the average rate of problems completed per hour for the student between  $x=1$  and  $x=3$ .

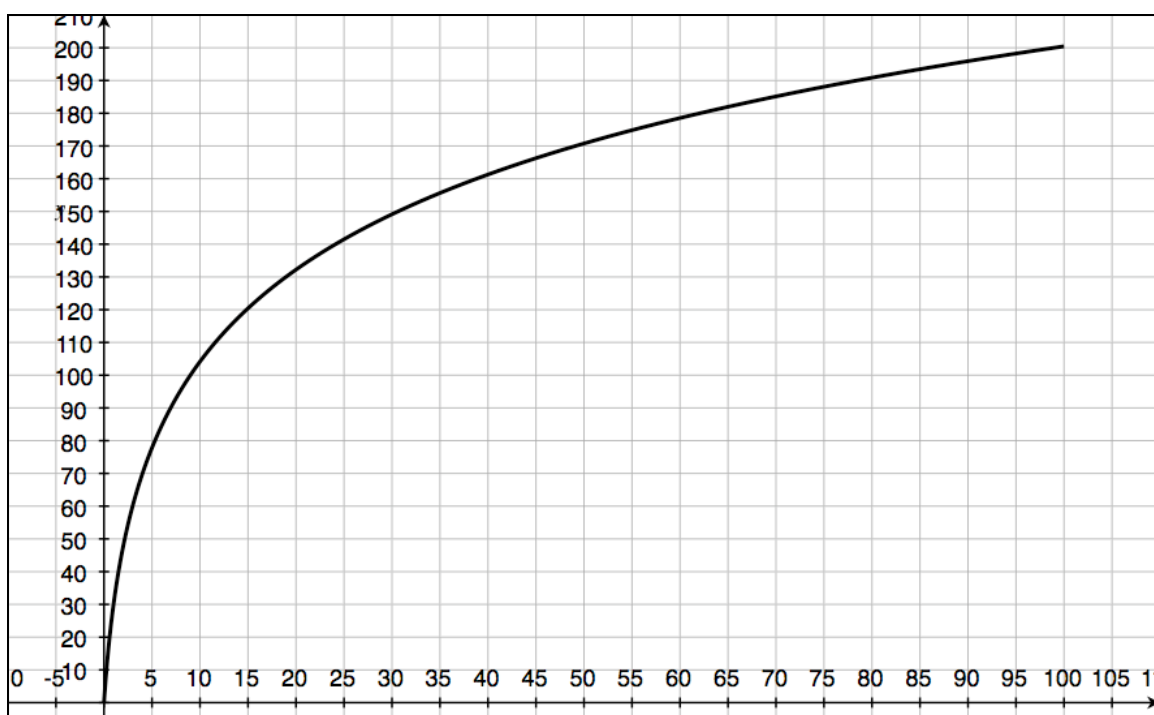
# Average Rate of Change PROBLEM SOLVER

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

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

Consider yesterday's exit slip

- 1) Consider the following graph of the number of students checked at the front gate versus time (in minutes).



We can consider the same information in table form:

Time	0	10	20	30	40	50	60	70
Students	0	104	132	149	161	171	179	185

How many students were checked in the first 10 minutes?

How many minutes passed?

How many students were checked per minute?

**FINDING AVERAGE RATE OF CHANGE**

Time	0	10	20	30	40	50	60	70
Students	0	104	132	149	161	171	179	185
Average Rate of change								

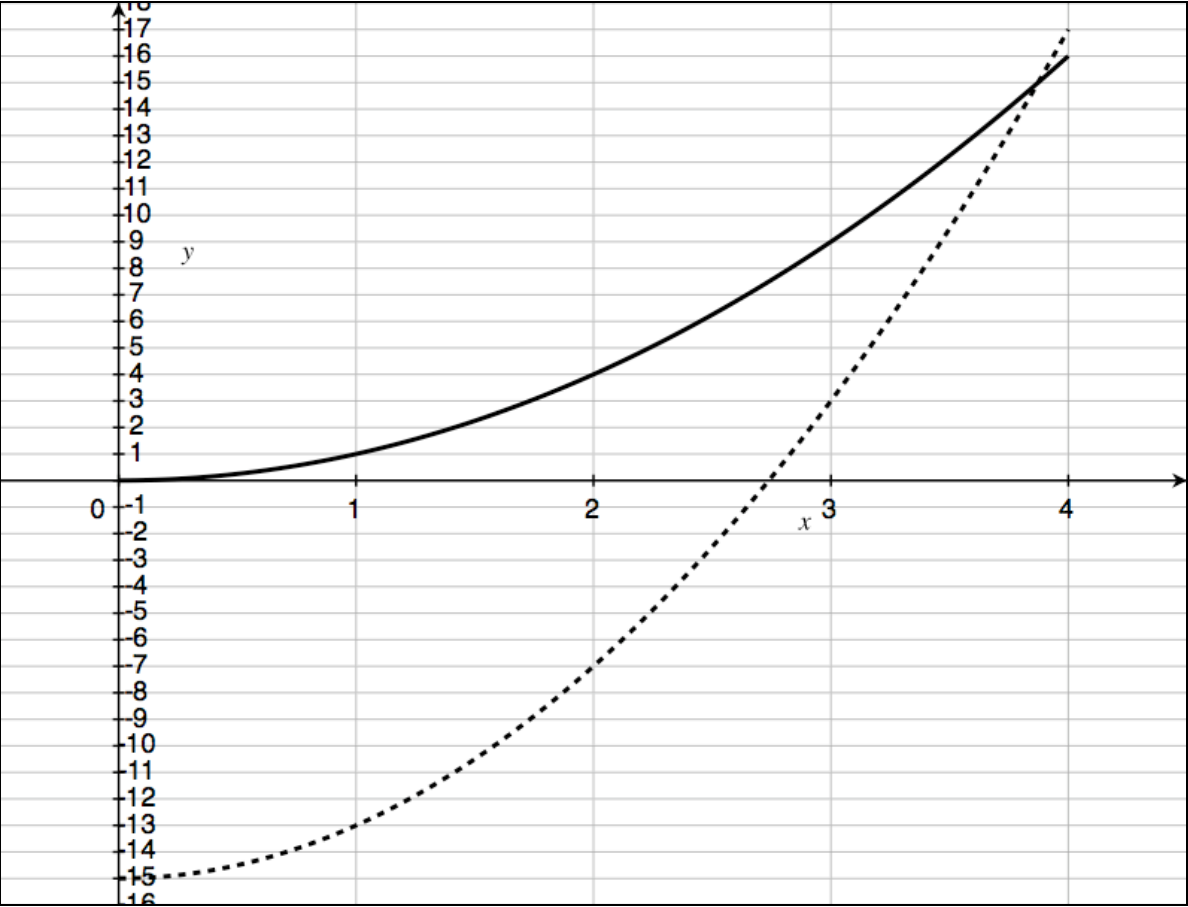
FIND THE FASTEST RATE – Which table has a greater average rate of change from  $x=0$  to  $x=4$

Table 1

x	0	1	2	3	4
y	3	4	7	12	19

Table 2

x	0	1	2	3	4
y	-15	-13	-7	3	17



# PRACTICE

Find the average rate of change for each interval in the following tables.

Table 1

x	0	1	2	3	4
y	3	4	7	12	19
Average Rate					

Table 2

x	0	1	2	3	4
y	-15	-13	-7	3	17
Average Rate					

# Precalc – Exit Slip – 9/10/10

Name: \_\_\_\_\_

Period: \_\_\_\_\_

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

Time (in minutes)	0	10	20	30	40
Total # of students checked at the gate (in students)	0	105	130	150	160

- Is the function increasing, decreasing or neither?
- What is the average rate of students checked at the gate between  $t = 0$  and  $t = 20$ ?
- What is the average rate of students checked at the gate between  $t = 20$  and  $t = 40$ ?
- Over which interval were students checked at the fastest rate?