

MATH 111 A, B
Exam I - Version 1
October 24, 2002

Name _____

Student ID # _____

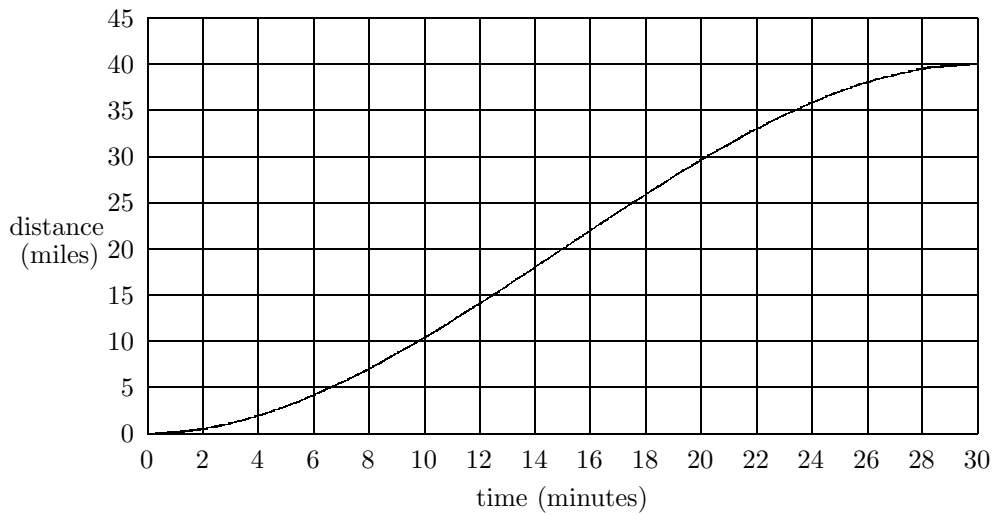
Section _____

1	18	
2	20	
3	12	
Total	50	

- You are allowed to use a calculator, a ruler, and one sheet of handwritten notes.
- You must show your work on all problems. The correct answer with no supporting work may result in no credit.
- Write your answers in the specified locations.
- If you need more room, use the backs of the pages and indicate to the reader that you have done so. If you still need more paper, please ask for some.
- Raise your hand if you have a question.
- Put your name on your sheet of notes and turn it in with the exam.
- You have 50 minutes to complete the exam.

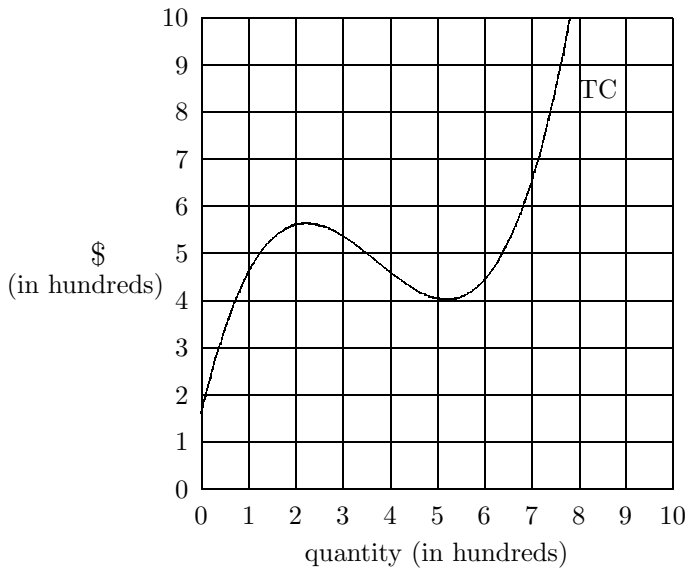
GOOD LUCK!

1. (18 points) The graph below gives the distance $D(t)$ traveled by a car beginning at time $t = 0$. Fill in the chart below with the appropriate translations and determine whether each statement is true or false.



English	Graph	Function	T/F (circle one)
The car travels 15 miles in the first 12 minutes.	The height of the graph at $t = 12$ is 15.		T F
	The diagonal line at $t = 4$ is steeper than the diagonal line at $t = 24$.	$\frac{D(4)}{4} > \frac{D(24)}{24}$	T F
The car goes faster, on average, between $t = 12$ and $t = 22$ than it goes between $t = 22$ and $t = 30$.			T F

2. (20 points) You own a company that produces and sells hubcap shams. The following is a graph of Total Cost vs. quantity.



(a) What is the value of Fixed Cost?

ANSWER: \$ _____

(b) Compute Variable Cost at 200 shams.

ANSWER: \$ _____

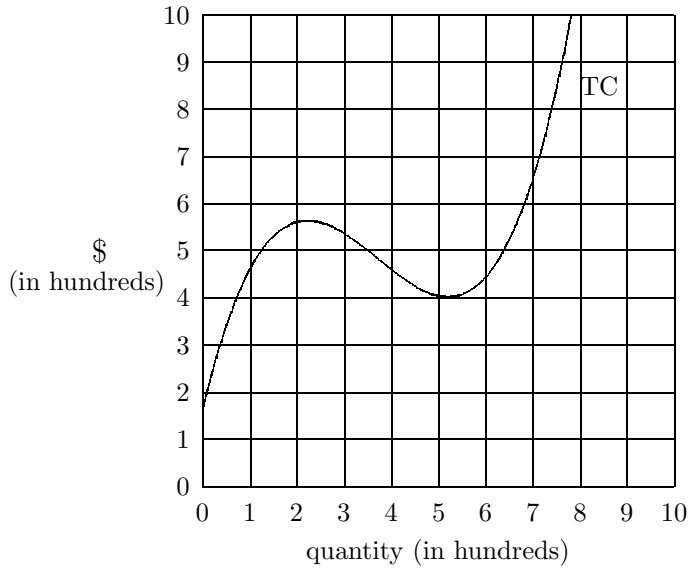
(c) Use the graph to find the Breakeven Point. Show all your work.

ANSWER: \$ _____.

(d) At what quantity is Average Cost the smallest?

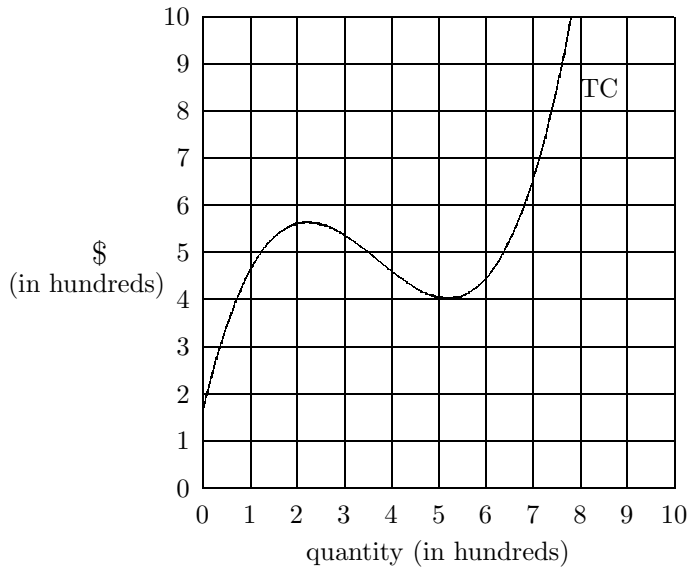
ANSWER: _____ shams

- (e) Suppose the shams sell for \$1 each. On the axes below, sketch the Total Revenue function and use your graph to estimate the maximum profit.



ANSWER: \$_____.

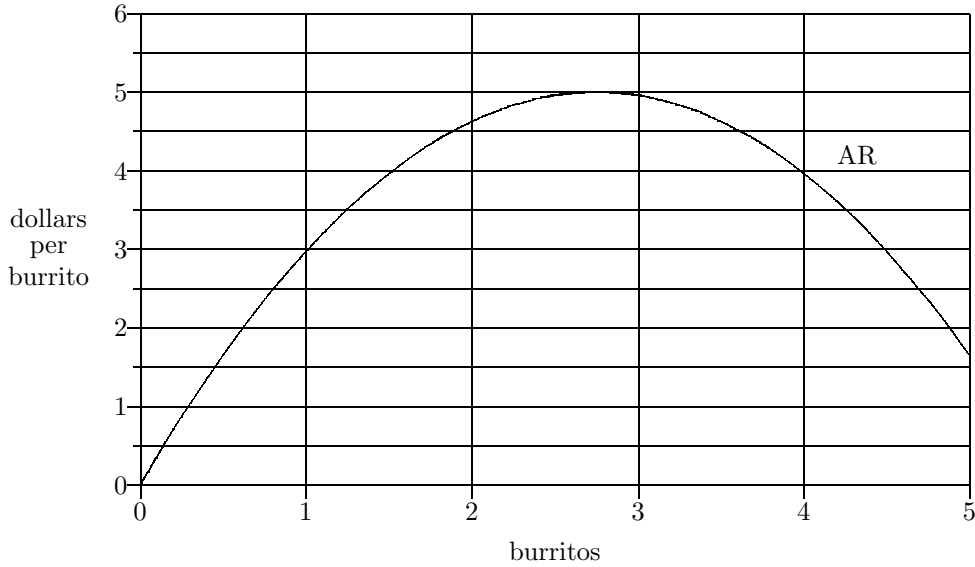
- (f) Suppose you change the price per item to \$ p . What would p have to be in order to make total revenue equal to total cost at a quantity of 400 shams? Clearly show all your steps.



ANSWER: $p = \$$ _____.

3. (12 points) The graph below is of Average Revenue for selling frozen burritos. Recall that Average Revenue is given by the formula

$$AR(q) = \frac{TR(q)}{q}.$$



- (a) Find a quantity at which Average Revenue is \$3 per burrito.

ANSWER: _____ burrito(s)

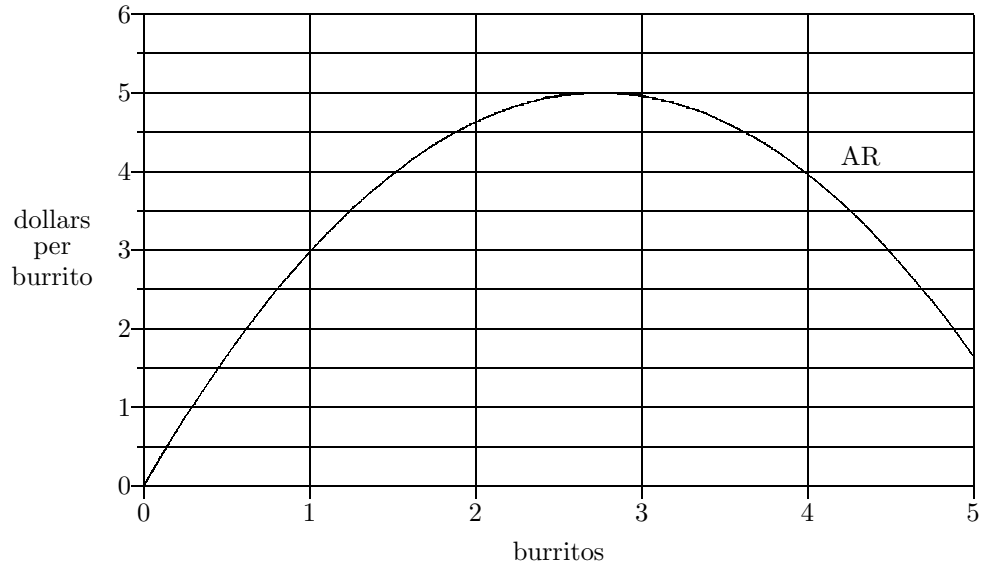
- (b) Compute Total Revenue at $q = 2$ burritos.

ANSWER: \$ _____

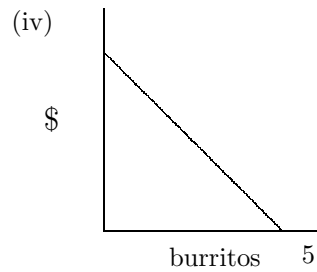
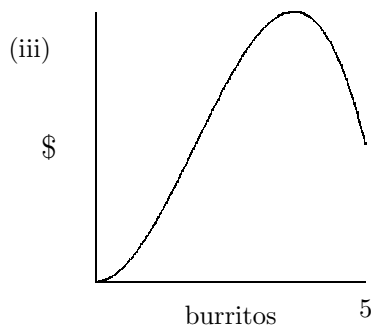
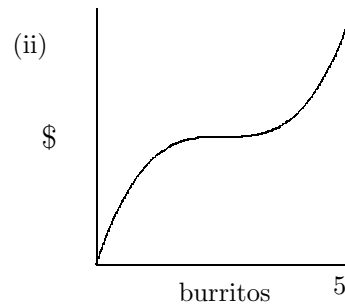
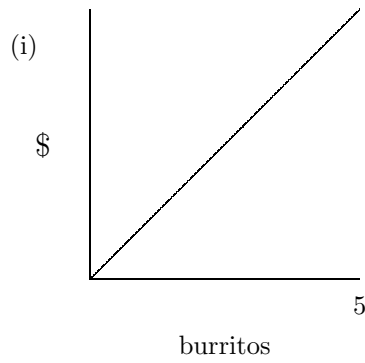
- (c) Compute Marginal Revenue at $q = 3$ burritos.

ANSWER: \$ _____

(d) Again, this is the graph of Average Revenue:



Which of the following could be the graph of Total Revenue for values of q between 0 and 5? Explain.



ANSWER: I choose graph _____ because: