NAME: _____ Student ID #: _____

QUIZ SECTION:_____

Math 111 A
Midterm I

October 19th, 2006

Problem 1	6	
Problem 2	12	
Problem 3	12	
Problem 4	20	
Total:	**50**	

- You are allowed to use a calculator, a ruler, and one sheet of notes.
- Your exam should contain 4 pages in total and 4 problems. Please check that your test is complete!
- You **must explain how you get your answers**. Correct (or incorrect) answers with no supporting work may result in little or no credit. On problems in which you use a graph, draw lines, label them, and mark points clearly.
- Write your **final answer in the indicated spaces**. Unless otherwise noted, round your answer to two decimal digits.
- If you need more room, use the backs of pages and indicate to the reader that you have done so.
- Raise your hand if you have a question.

GOOD LUCK!

Do you want me to post your grade so far next week on the class website under the last 4 digits of your student ID?

☐ *Yes, please post my grade. Sign to give permission:* _____

☐ *No, please don't post my grade so far.*

1 (6 points) Solve the following pair of linear equations:

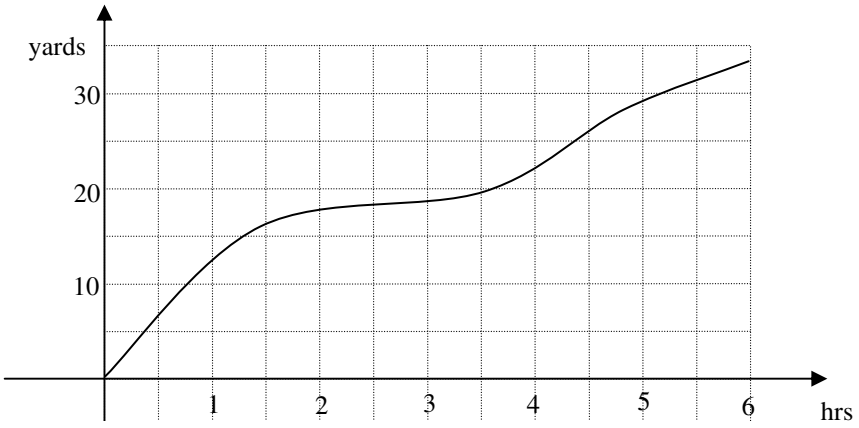
$$\begin{cases} x - 2 = y \\ 2x + 1 = 4y \end{cases}$$

Work:

Answer: x =_____, y =_____

2 (12 points)

The graph to the right represents the distance D(t) (in yards) traveled by the Mars Rover vehicle up to time t (in hours).



a) How long did the vehicle take to travel 25 yards?

Work:

Answer: it took _____ hours.

b) What was the average trip speed of the Rover two hours into the trip? (include units)

Work:

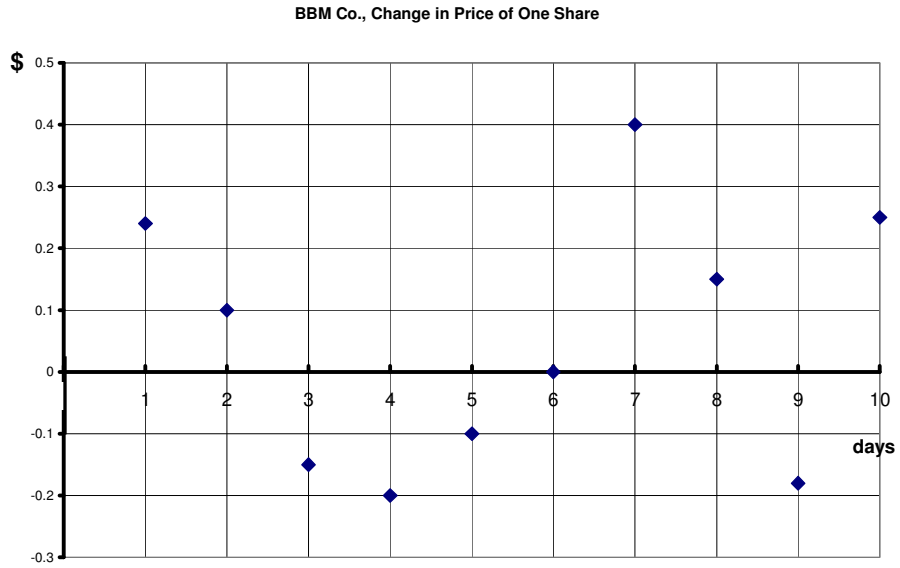
Answer: ATS(2)=_____Units: _____

c) Find a time t, if any, such that $\frac{D(t) - D(2)}{t - 2} = 2.5$

Work:

Answer: t = _____ hours.

3 (12 points) The opening price of one share of stock for the BBM Company is monitored over a period of 10 days. The graph below gives **the change** in the opening price since the previous day. For example, the point (3, -0.15) on the graph means that the opening price of the stock on day 3 was \$0.15 lower than on day 2.



a) When was the opening price higher, on day 0 or on day 2? Circle one and explain.

b) What was the average rate of change of the stock price over the first week?

Work:

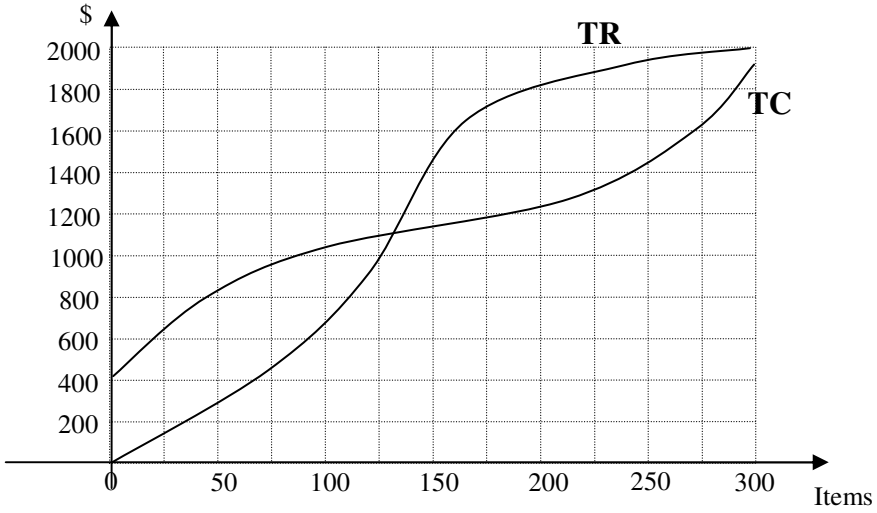
Answer: _____ \$ per day

c) Suppose the opening price of a share of BBM was \$10.50 on day 0. How much would it cost you to buy **1000 shares** at opening on day 5?

Work:

Answer: \$_____.

4 (20 points) The following are the graphs of the total revenue (**TR**) and the total cost (**TC**), in dollars, for producing and selling Items.



a) Find the Average Revenue from selling 150 Items. Include correct units.

Work:

Answer: AR(150)=_____ Units: _____

b) How much extra would it cost to produce the 101st Item, if you have already produced 100 Items?

Work:

Answer: It would cost an extra _____ dollars

c) Find the maximum profit, and at what quantity q it occurs.

Work:

Answer: Maximum profit is $_____ for q = _____ Items

d) For this total cost curve, what is the breakeven price in a market price situation?

Work:

Answer: BEP= _____ $ per Item