MAT 1030   Name: _____

TEST   Soc sec #: _____

Work quickly and carefully, following directions closely.

§ I.   TRUE AND / OR FALSE. Circle your answer. There are 2 questions at 2 points each.

1.   TRUE or FALSE: At maximum profit, the marginal revenue equals the marginal cost..

2.   TRUE or FALSE: *Market Equilibrium* is when one negotiates a selling price contract.

§II. MULTIPLE CHOICE. Circle your answer. There are 3 question at 5 points each.

1.   The curve at the right belongs to which common function family

    a)   Linear
    b)   Normal Distribution
    c) 4th order polynomial
    d)   none of the above
    e)   all of the above
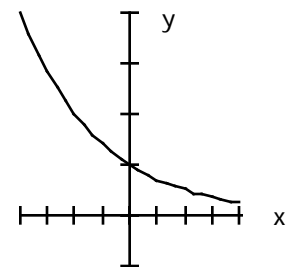
2.   Suppose that marginal revenue is $MR[10] = 200$ and $MC[10] = 190$. Then you can expect that

    a) $MP[10] < 0$
    b) $MP[10] = 0$
    c) $MP[10] > 0$
    d)   none of the above
    e)   all of the above


3.   Given that $MP[100] > 0$ and that $MR[100] > 20$, which of the following is/are true:

    a) $MC[100] < 20$
    b) $P(100) > 0$
    c) $C(100) = 20$
    d)   all of the above
    e)   none of the above

§ III.   PROBLEMS. You **must** show your work to receive credit. There are 5 problems at 10 points each.

1.   Make a two axis *x-y* graph using the data at the right. Sketch your graph in the window below.

	A	B	C	D	E
1	Year	1992	1993	1994	1995
2	Production	1200	1300	1150	1450
3	Avg. Inventory	120	100	110	100
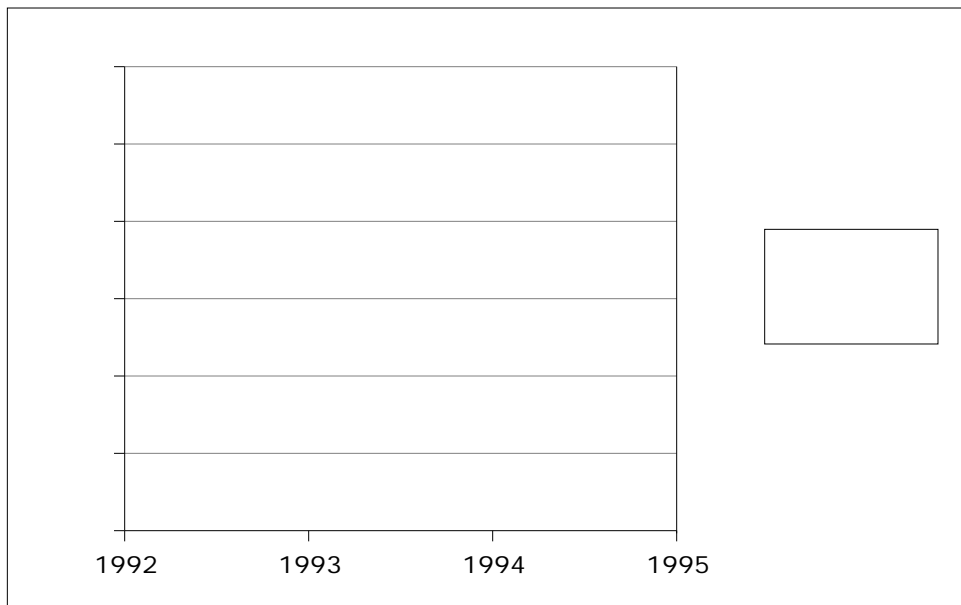
Build your personal data table below to use for Problem 2. Fill in the **last four digits** of your soc. sec. number in the spreadsheet below.

Month	Jan	Feb	Mar	Apr		Jun
Sales (1000's)	*digit 6*	*digit 7*	*digit 8*	*digit 9*		?

2.   a. Find the equation of the best fit **line** for your personal data. (Describe what you did to find the line.)

   $y =$

   b. Predict the sales for June. (Describe what you did to find your prediction.)

3. A hardware store will buy 200 light bulbs priced at 60¢ a piece or 150 at 80¢ a piece; the supplier will sell 175 bulbs at 75¢ a piece or 125 bulbs at 60¢ a piece. Find the market equilibrium point.

4. The cost of a six week summer bridge class is as follows:

> Facilities $150.00
> Supplies   50.00
> Instructor   400.00 (fewer than 20 students)
> Assistant   200.00 (20 or more students)
>
> Fees $25.00 per student

Graph the profit function and label regions of profit and loss.
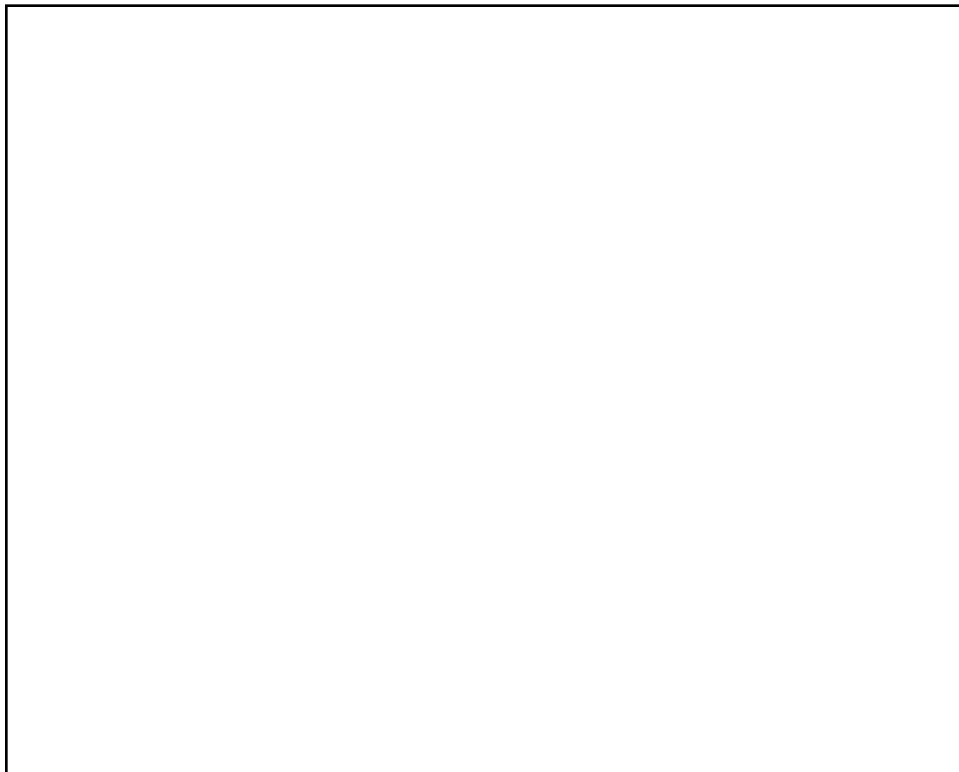
Problem 5: The following figures are given to you by the accounting department.

quantity	10	35	60	85	110	135	160	185	210	235	260
price	11.9	11.65	11.4	11.15	10.9	10.65	10.4	10.15	9.9	9.65	9.4
cost	1772.5	1260	872.5	610	472.5	460	572.5	810	1172.5	1660	2272.5

5.   a. Find the best fit function for price. How did you find your function?

b. Find the best fit function for cost. How did you find your function?

c. Find the break-even point(s). How did you find your point(s) ?

EC: **Explain** why the statement is ☐ true or ☐ false:
        The *break-even point* is where selling price equals average cost.