## QUIZ 7 - MATH 111 YOUR NAME:

Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. The following table presents the sales S in thousands of dollars of a small firm in time t (measured in years since 1990):

Year $t$	0	3	6	9	12
Sales $S$	9.3	10.77	12.46	14.43	16.70

(a) Create a table showing the values of  $\ln S$  as a function of t.

(b) Check whether  $\ln S$  vs. t is a linear function. Please explain.

(c) Create a linear model for  $\ln S$  vs. t.

(d) Use your linear model of  $\ln S$  vs. t to obtain an exponential model for S vs. t. Please, explain clearly the process and state clearly the meaning of variables and the units used in this model.

(e) What is the yearly growth rate? What is the yearly percentage growth? Please, explain.

(f) When would we expect the sales to reach the level of \$ 25,000, assuming that the same trend continues? Please, explain your work.