QUIZ 5 - MATH 111 YOUR NAME:____

Read each problem **very carefully** before starting to solve it. Each problem is worth 10 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. An automotive engineer is testing how quickly a newly designed sports car accelerates from rest. He has collected data giving the velocity, in miles per hour, as a function of the time, in seconds, since the car was at rest:

Time	2.0	2.5	3.0	3.5
Velocity	27.9	33.8	39.7	45.6

(a) Show that the data in this table can be modeled by a linear function. Explain why.

(b) What is the slope of the linear function giving velocity versus time? Explain its meaning.

(c) Find a formula for velocity versus time according to the data in the table.

(d) What would the formula give for the velocity at time 0? What does this suggest about the validity of the formula over the initial segment of this experiment?

(e) Assuming that the linear model is valid for time between 2 and 5 seconds, how would you complete the following statement drafted by the marketing department of the company? "This car goes from 0 to 60 mph in _____ seconds!"