1. Math 116.01 - Linear Functions

Name: _____

(1) (a) Suppose demand per week for a product is 12000 units when the price is \$8 each, and 9500 units when the price is \$10 each. Find the demand function, assuming it is linear.

(b) Suppose also that when the price is \$8, manufacturers are willing to produce 8000 units per week, and when the price is \$11, they are willing to produce 9000 units. Find the supply function, assuming it is linear.

(c) Find the market equilibruim.

(2) *Depreciation:* Suppose that a new car for your business is worth \$15000 now. You expect the car to be worn out in 7 years, at which time its value will be \$0. Find a linear function that expresses the value of the car as a function of the number of years since you purchased it.

How long does it take for the car to lose 75% of its value?

(b) Suppose that, instead of the car being worth \$0 after 7 years, you expect that it will be work \$5000 in 3 years, and \$1000 in 7 years. Is the value function for this situation linear? If not, explain why not. If so, find the value function.