

Quiz #5

Problem 1 (15 points) Suppose that one share of stock in EverBank will be worth \$40 in one year with probability .15, \$30 with probability .30, \$20 with probability .45, and \$0 with probability .10.

Solve for the expected value and variance of a share of EverBank.

Problem 2 (10 points) Gwen enjoys going to Keeneland, but she never gambles on races (any gamble has a negative expected value). True/false: Gwen is definitely risk-averse? Explain briefly.

Problem 3 (35 points) Larry is offered a gamble which will pay \$0 with probability .3, \$1 with probability .4, and \$2 with probability .3. Larry's utility function over winnings is $u(w) = w^3$.

a. What is the expected value of the gamble? What is Larry's expected utility?

b. If Larry is offered \$1.20 with certainty as an alternative to the gamble, will he take it?

c. Based on your answer to b, is Larry risk-averse, risk-neutral, or risk-loving?

Problem 4 (25 points) Suppose that 40% of used car sellers value their cars at \$10K, 50% value their cars at \$5K, and 10% value their cars at \$0. A car worth v to a seller is worth $1.5v$ to a buyer. Car buyers cannot observe the worth of an individual car, but are aware of the distribution of values.

a. Is it an equilibrium for all three types of used cars to be sold? If so, give a price at which all three types are willing to sell and buyers are willing to buy. If not, prove it.

b. Is it an equilibrium for exactly two types of cars to be sold? If so, say which two, and give a price at which these sellers are willing to sell and buyers are willing to buy. If not, prove it.

Problem 5 (15 points) Darrin says: “If senior citizens have to buy their own insurance, only the ones who need it the most will find it worth the expense, meaning it won’t be profitable for a private company to provide seniors insurance... thus we need the government to provide seniors with health insurance!”

Darrin is arguing for government intervention as a solution to which problem we’ve discussed in class?

Mitt says: “If the government bails out every failed firm, firms will be encouraged to take on excessive risks in the future! Therefore, we should not bail out any firms”. Mitt is worried about which problem discussed in class?