

Finance 360 Problem Set #10

1) Consider the following gambles:

Option A: 70% chance of winning \$100
30% chance of losing \$200.

Option A: 40% chance of winning \$325
60% chance of losing \$200.

- a) Calculate the expected value and standard deviations of the two gambles.
- b) Which option would you choose if you were risk loving? Risk neutral? Risk averse? Explain.

2) Explain the difference between moral hazard and adverse selection. Give an example of each.

3) Suppose that the probability of getting in an accident is 2%. The average cost of an accident is \$50,000. Suppose that the average car driver has preferences given by

$$U(I) = I^{\frac{1}{3}}$$

- a) Assuming that this individual earns \$100,000 per year in income, calculate his expected utility if he buys no insurance.
- b) Calculate the amount this individual would be willing to pay for a full coverage insurance policy.
- c) Repeat (a) and (b) for an individual who earns \$50,000 per year.
- d) How much should the insurance company charge for a policy if it can't discriminate between the two individuals? What should it charge if it can discriminate?

4) Suppose that you were in the market for a used car. There are five cars on the lot – you know the following values, but you don't know which is which.

\$1,000, \$2,000, \$3,000, \$4,000, \$5,000.

- a) How much would you be willing to pay for a car (assuming that you were risk neutral)?
- b) What should eventually happen to the price/supply of cars?