

Recitation 5

Intermediate Micro

1. Suppose that you own a bar near the University of Nevada at Las Vegas. Every time the basketball team wins a home game, business is brisk and you clear \$500 for the day. When it loses, business is slow and on those days you clear only \$50. Let p be the probability that the basketball team wins. The problem is, you don't like risk; you would prefer a certain income to an uncertain one. Fortunately for you, gambling is legal in Nevada and there are many people who like to bet on sporting events. Thus you can "hedge" against low profit days by betting against the home team.

- a) Assuming that you can get fair odds (so that a bet is a fair bet) and that a bet pays off \$1 when the home team loses then how much would the losses of the bet be in the case that the home team wins? Your answer will be a function of the probability p .
- b) Using your answer to part a how much should you bet per game so that you will be perfectly "hedged" that is how much should you bet in order that you have a certain income?

2. Will keeps forgetting his \$500 laptop in the library. The probability that the laptop is stolen is $1/3$. His other assets (besides the laptop) are worth \$400. His utility function is $u(x)=x^{1/2}$.

- a) Compute Will's Arrow-Pratt measure of risk aversion at his no-laptop wealth of \$400.
- b) Graph and compute Will's certainty equivalent and risk premium.
- c) You offer him the following deal. At a cost P you'll bear some of the risk, and you'll give him \$300 if his laptop is stolen. Compute the fair price. Is he going to accept your offer at the fair price?
- d) Suppose Will can buy \$ N of insurance for \$ $N/3$. (Note this is the fair price.) How much insurance will he buy?