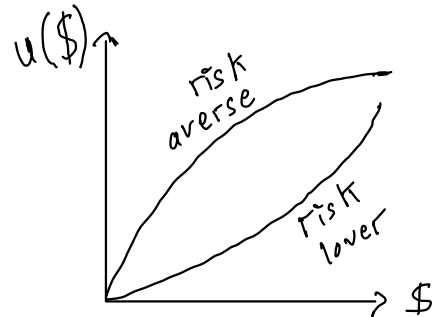


Today's Topic: Uncertainty & Risk Aversion

BERNOULLI FUNCTIONS

These show a diminishing value of money.

$$u(w) = \sqrt{w} \text{ or } u(w) = w^2$$



CP1a. Expected Utility $EU = \sum_{i=1}^n p_i u_i$ where $n = \# \text{ outcomes}$

In this lottery example, $n=2 \rightarrow p_{win} = 0.5, p_{lose} = 0.5$
 $EU = \frac{1}{2} u(4) + \frac{1}{2} u(16) = \frac{1}{2} \cdot 2 + \frac{1}{2} \cdot 4 = 3.$

CP1b. Selling the ticket for x dollars: $EU = 1 \cdot u(4+x).$

We will only do this if $\sqrt{4+x} \geq 3 \rightarrow 4+x \geq 9 \rightarrow x \geq 5.$