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 Econ 812

## HW #6

1. Consider the following gambles:

Gamble 1: 50% chance of \$100, 50% chance of \$0.

Gamble 2: 10% chance of \$50,000, 40% chance of \$10,000, 50% chance of \$1.

Gamble 3: Equal chances of \$100, \$1000, \$10,000, \$100,000, and \$1,000,000.

Fill in the certainty equivalents:

EU	Gamble 1	Gamble 2	Gamble 3
$x^{.5}$			
$x$			
$x^2$			

2. An EU maximizer gets \$100 with probability  $p$  and \$0 with probability  $(1-p)$ . Graph EU as a function of  $p$ .

3. Consider a risk-neutral farmer with the cost function  $TC=q^2$ . The market price is 10 with  $p=.5$ , and 1 with  $p=.5$ . If the farmer has RE, what is his profit-maximizing output level? If the farmer's beliefs do not satisfy RE (he thinks  $p=a$ ), solve for lost profit as a function of  $a$ .

4. Suppose your probability of finding a job is given by  $p=f^{.5}$ , where  $f$  is the fraction of your time that you devote to job search. Your gross EU of getting a job is 10; your gross EU without a job is 0. Your net  $EU=EU(\text{job outcome}) - bf^2$ . Solve for your optimal  $f$ .

5. Suppose your  $EU=w^{.5}$ , and insurance is sold at twice the actuarially fair rate. Your uninsured income is \$40,000 with  $p=.9$ , and \$10,000 with  $p=.1$ . Solve for your optimal quantity of insurance.

6. Do your beliefs about your overall academic performance satisfy RE? (1 paragraph)

7. Use search theory to explain optimal test-taking strategy. (1 paragraph)

8. After reading Caplan's *Economic Journal* piece, pick the belief typical of economists that you agree with the least. Where are your fellow economists going wrong? Is this systematic or random error? (half a page)