

Midterm Exam October 22 2008 2:30 – 3:50 pm

Do all 4 questions. All count equally.

1. (i) Give an example of preferences which are convex, but not strictly monotonic.

(ii) Give an example of preferences which are strictly monotonic but not convex.

2. If a person's expenditure function is

$$e(\mathbf{p}, u) = [(p_1)^{1/3} + (p_2)^{1/3} + (p_3)^{1/3}]^a u$$

(i) What is a ?

(ii) What is her Hicksian demand function for good 1?

(iii) What is her indirect utility function?

3. An expected utility maximizer has utility-of-wealth function

$$U(W) = 200 - \frac{1}{W}$$

She has initial wealth of 1 million dollars. An opportunity arises to invest half her wealth in a stock. With probability π the stock will triple in value (to \$1.5 million) ; with probability $1 - \pi$ the stock will be worthless.

What must π be in order for this person to be willing to make this investment?

4. Could a firm's unconditional demand function for an input slope up? Explain your answer.