

Revision for Midterm - additional questions2

1.

A consumer has utility function

$$u(x_1, x_2) = \frac{1}{\frac{1}{x_1} + \frac{4}{x_2}}.$$

- A) Find this consumer's Marshallian demand function for each good
- B) Find this consumer's indirect utility function
- C) Find this consumer's expenditure function.
- D) Find this consumer's Hicksian demand function for each good.

2.

Rocky consumes two goods. He prefers any bundle such that $x_1 > 0$ and $x_2 > 1$ to any bundle for which these two inequalities are not satisfied. His preferences over bundles such that $x_1 > 0$ and $x_2 > 1$ can be represented by the utility function

$$u(x_1, x_2) = \ln(x_1 + 1) + \ln(x_2 - 1)$$

for all (x_1, x_2) .

- i) Find Rocky Marshallian demand function
- ii) For what price-income combinations does Rocky choose positive amounts of both goods.
- iii) Find Rocky indirect utility function.

3.

A firm has a production function

$$F(x_1, x_2) = (\sqrt{x_1} + \sqrt{x_2})^2.$$

It is a price taker in the factor markets.

Is this production function homogeneous? If so, of what degree?