

Do all 4 questions. All count equally.

1. If a person's preferences are strictly convex, show why there is a unique consumption bundle which is preferred to any other consumption bundle in her budget set.

2. If a person's utility-of-wealth function is

$$u(W) = \sqrt{W}$$

calculate the risk premium associated with an investment project which will double the person's wealth with probability 0.5, and which will leave the person's wealth unchanged with probability 0.5.

3. Calculate the cost function, if the production function is

$$y = f(x_1, x_2) = 100 - \frac{1}{x_1} - \frac{1}{x_2}$$

4. Would the own-price elasticity of demand for the product of a single-price monopoly ever be greater than 1 in absolute value? Explain briefly.