

Shivaji College, University of Delhi
Department of Economics
Assignment (2023-24)

Name of Course: B.A.(H) Economics

Semester: II

Name of Paper: Intermediate Mathematical Methods for Economics

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Max. Marks: 15

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Q-1. Find the domains of the following functions and sketch the domains in the xy -plane. (5)

(a) $f(x, y) = \frac{1}{\sqrt{x-y}} + \sqrt{y}$

(b) $f(x, y) = \ln(1-x^2-y^2)$

Q-2. Examine the definiteness of the following quadratic forms: (5)

(a) $f(x, y) = -2x^2 + 6xy - 5y^2$

(b) $f(x, y) = 4x^2 + 4xy + 3y^2$ s.t. $x-2y=0$

Q-3. The demand for good A is given by: (5)

$$q_A = k p_A^\alpha p_B^\beta \quad (k, p_A, p_B > 0)$$

where k, α and β are constants, and p_A and p_B are prices of good A and a related good B, respectively:

(a) Calculate the elasticities of demand for good A with respect to p_A and with respect to p_B .

(b) What are the expected signs of α and β (assume that goods A and B are substitutes)?

Bhumika