

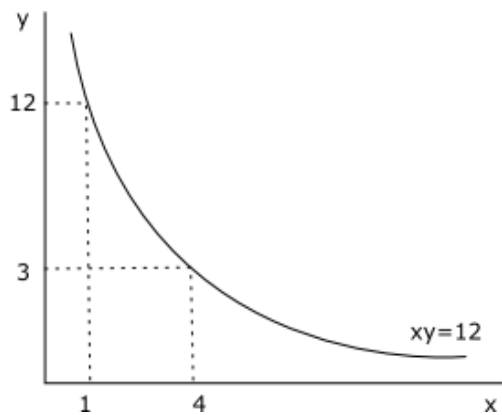
Var. B

Name:

1. [1.5 points]

$$U(x, y) = xy$$

1. Depict an indifference curve for utility level of 12 (find and depict at least two points and corresponding quantities of $[x,y]$)
2. Calculate the marginal rate of substitution in one of these points



$$MRS = -\frac{MU_x}{MU_y} = -\frac{y}{x} \Big|_{(4,3)} = -\frac{3}{4}$$

2. [1.5 points]

$$U(x, y) = xy$$

$$P_x = 5$$

$$P_y = 3$$

$$I = 60$$

- Calculate optimum of consumer (amount of x and y)

$$\frac{MU_x}{MU_y} = \frac{P_x}{P_y} \Rightarrow \frac{y}{x} = \frac{5}{3} \Rightarrow 5x - 3y = 0 \quad \text{Optimality condition}$$

$$P_x x + P_y y = I \Rightarrow 5x + 3y = 60 \quad \text{Budget constraint}$$

$$x = 6, y = 10$$