MARGINAL RATE OF TECHNICAL SUBSTITUTION

The marginal rate of technical substitution (MRTS) refers to the rate at which one input can be substituted for another while keeping the level of output constant. Specifically, the MRTS of labor (L) for capital (K) is represented by the slope of an Iso - quant, multiplied by .

Since the slope of an Iso - quant is moving down, the Iso - quant is given by $\Delta K / \Delta L$.

MRTS = $- \Delta K / \Delta L$ = Slope of the ISO - quant.

The following table will make the concept clear

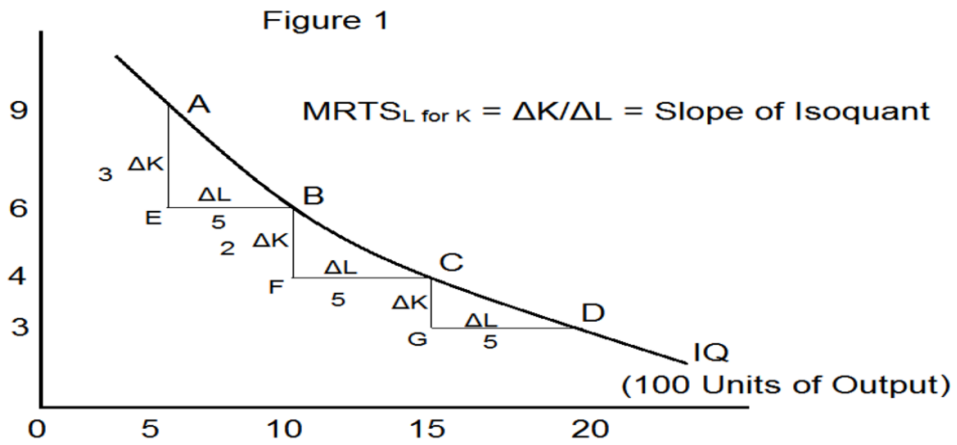| Combinations	Iso - quant Schedule		MRTS LK	Output
	Labour (L)	Capital (K)		
A	5	9	-	100
B	10	6	3.5	100
C	15	4	2.5	100
D	20	3	1.5	100

In the above table, all the four-factor combinations A, B, C and D produce the same level of 100 units of output. They are all Iso - product combinations. As we move from combination A to combination B, it is clear that 3 units of capital can be replaced by 5 units of labor. Hence, MRTSLK is 3:5. In the third combination, 2 units of capital are substituted by 5 more units of labor. Therefore, MRTSLK is 2:5.

MRTSLK at point B = AE/EB

MRTSLK at point C = BF/FC

MRTSLK at point D = CG/GD

Figure 1

MRTS$_{L \text{ for } K}$ = ΔK/ΔL = Slope of Isoquant

IQ
(100 Units of Output)