

# Microeconomics, Review Notes

## October 1, 2025

**Keywords:** Income expansion path, Engel curve, Individual demand curve, Slutsky equation, Substitution effect (law of demand), Income effect, Inferior goods, Giffen goods, Production function, Marginal product, Isoquant, Marginal rate of technical substitution, Isocost, Constrained cost minimization, Cost function, Increasing/constant/decreasing returns to scale.

**Concept check Q1.** Suppose a consumer's preferences satisfy completeness, transitivity, monotonicity, and convexity. There are only two consumption goods. Is it possible that both goods are inferior goods? Explain your answer.

**Concept check Q2.** A production function is given as  $Q = f(L, K) = L^{0.75}K^{0.25}$ , where  $L$  and  $K$  are the units of labor and capital, respectively. The wage rate and rental rate are given as \$3 and \$16, respectively.

- (1) Derive an isoquant curve for  $Q = 8$ . (Rearrange the production function in terms of  $K = \dots$ )
- (2) Find the optimal labor-capital bundle to produce  $Q = 8$ .
- (3) Derive a cost function. (The answer should be like  $C(Q) = \dots$ )