

Exam 2: ECON 301 Spring 2026. Formulas to know

Rationality & Utility:

Expected Value: $\sum x_i \cdot p_i$ where x =outcome, p =probability

Expected Utility: $\sum u(x_i) \cdot p_i$ where x =outcome, p =probability

Consumer Side:

Budget Line: $P_x \cdot X + P_y \cdot Y = M$

Marginal Rate of Substitution = $\frac{MU_x}{MU_y}$

Market Rate of Substitution = $\frac{P_x}{P_y}$

Consumer Equilibrium: $\frac{MU_x}{MU_y} = \frac{P_x}{P_y}$

Producer Side:

Average Product of Labor = $\frac{Q}{L}$ Average Product of Capital = $\frac{Q}{K}$

Marginal Product of Labor = $\frac{\Delta Q}{\Delta L}$ Marginal Product of Capital = $\frac{\Delta Q}{\Delta K}$

Value of Marginal Product of Labor: $P \cdot MP_L = w$

Marginal Rate of Technical Substitution: $\frac{MP_L}{MP_K}$

Isocost Line: $C = wL + rK$

Cost Minimization: $\frac{MP_L}{w} = \frac{MP_K}{r}$

Production Functions:

Linear: $Q = aK + bL$

Leontief: $Q = \min\{aK, bL\}$

Cobb-Douglas: $Q = K^a L^b$