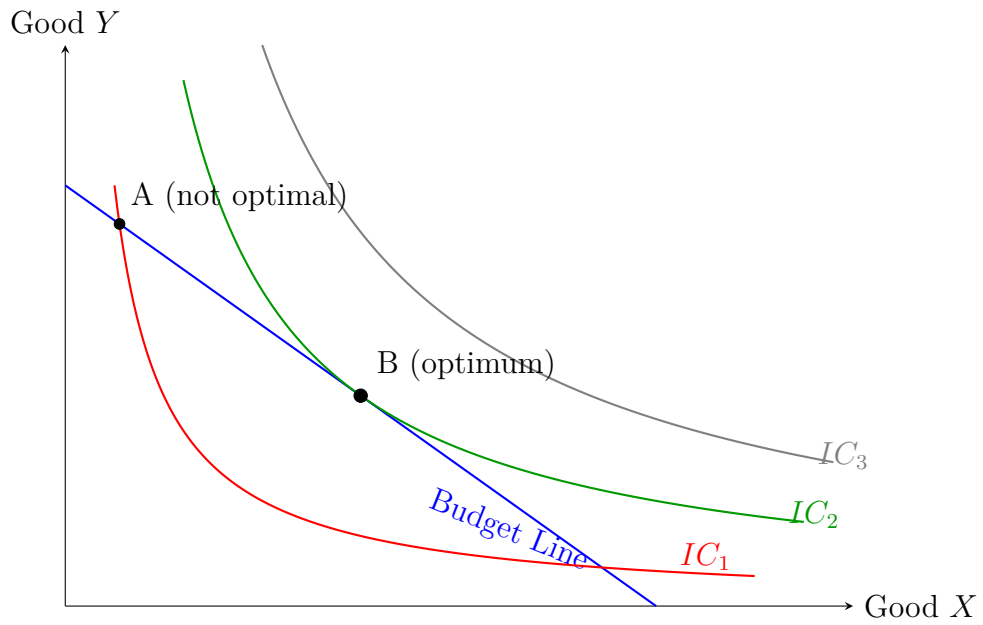
Week Review - Econ 101

Part 1: The Optimum

i. Finding the Highest Indifference Curve

Consumers seek to reach the highest indifference curve given the constraints on their income and prices.



Takeaway: At Point A, the consumer is not maximizing utility because the Marginal Rate of Substitution (MRS) is greater than the price ratio. This means the consumer would value more than what it costs. To maximize happiness, they should move down and to the right along the budget line until they reach the tangency point at B.

ii. Bang for the Buck

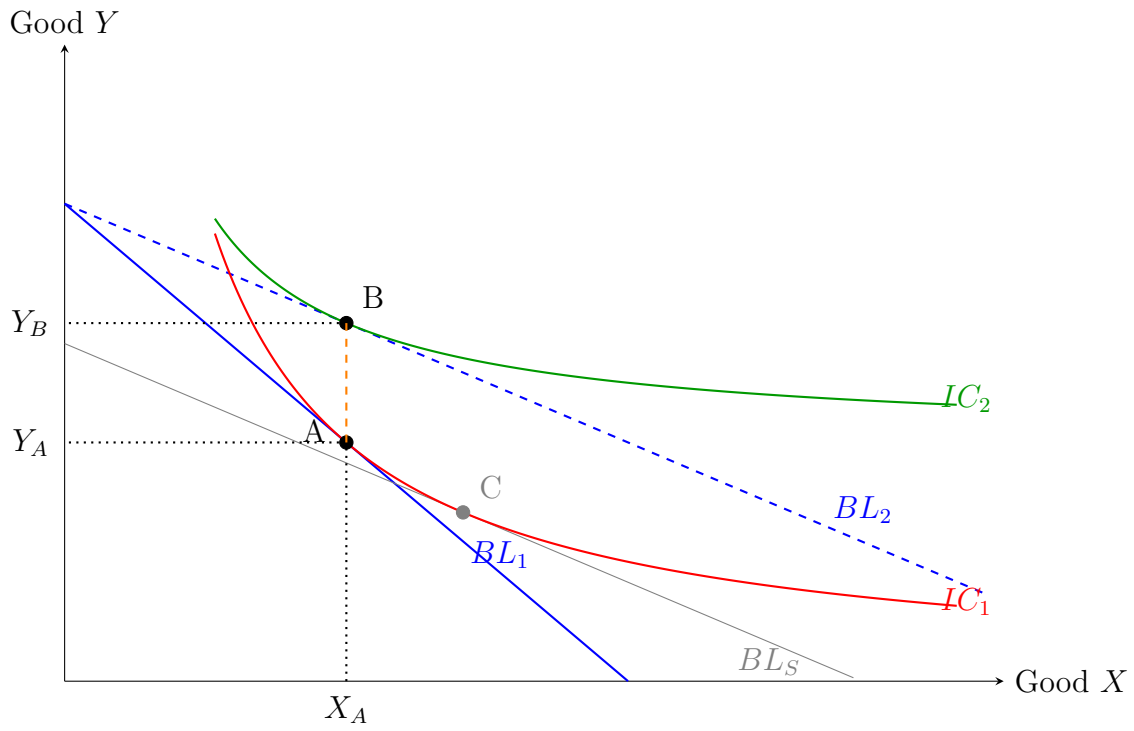
The utility-maximizing condition for the optimum is expressed as:

$$\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$$

The units of this ratio are $\frac{\text{Utils}}{\$}$. This metric represents the extra happiness obtained from the next dollar spent on a good.

Part 2: Price Changing Scenario

Prompt: In response to a fall in the price of X, a consumer with standard (bowed-in toward the origin) indifference curves decides to buy more Y and the SAME amount of X.



Decomposing the Effects

We move from A $\rightarrow$ C (substitution effect) and then C $\rightarrow$ B (income effect).

Good	Substitution Effect (SE)	Income Effect (IE)	Total Effect (TE)
Good X	(+)	(−)	(0)
Good Y	(−)	(+)	(+)

Deductions & Insights:

- Good X is an Inferior Good at that point: The substitution effect on X is positive (X became relatively cheaper, so the consumer substitutes toward it: A $\rightarrow$ C moves right). For the total effect to be zero, the income effect on X must be negative and exactly offset the SE. Since real purchasing power rose with the price drop, a negative income response means X is inferior at that point.
- Good Y is a Normal Good: The substitution effect on Y is negative (Y became relatively more expensive: A $\rightarrow$ C moves down). For the total effect on Y to be positive, the income effect must be positive and large enough to overwhelm the SE. A positive income response to higher real income means Y is normal.