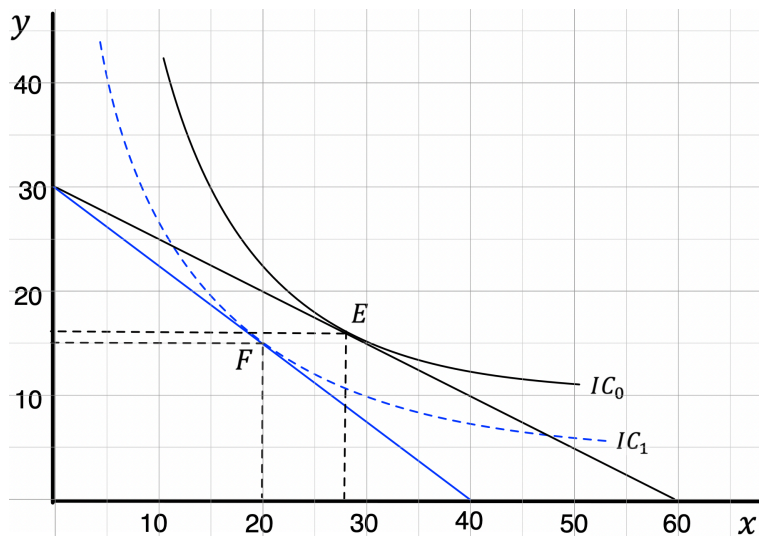


Chapter 14.a Substitution and Income Effects

2. p_x increases from $p_x = 2$ to $p'_x = 3$.



- The equilibrium point changes from $E = (x_0, y_0)$ to $F = (x_2, y_2)$. In this case, when p_x increases, the consumer buys less of y . This means x and y are complementary.
- The relative price changes from $\frac{p_x}{p_y} =$ to $\frac{p'_x}{p_y} =$
- To keep the same satisfaction with the new relative price $\frac{p'_x}{p_y}$ draw an **imaginary budget line** with slope $\frac{p'_x}{p_y}$ to be tangent with the original Indifference Curve IC_0 .
- The Substitution Effect is:

$$S.E. = \begin{cases} \Delta x = x_1 - x_0 = < 0 \\ \Delta y = y_1 - y_0 = > 0 \end{cases}$$

- When price changes in such a way that x is relatively more expensive, the Substitution Effect is always such that $\Delta x < 0$ and $\Delta y > 0$.
- Income Effect can be found by moving the imaginary budget line to be tangent with the new budget line.

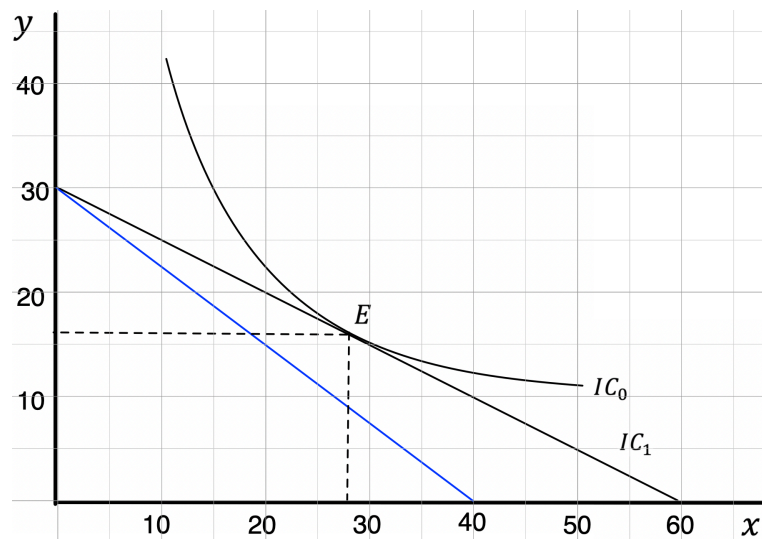
$$I.E. = \begin{cases} \Delta x = x_2 - x_1 = \\ \Delta y = y_2 - y_1 = \end{cases}$$

- According to the resulting $I.E.$, x and y are normal goods because as the real income decreases, the consumer consumes less of both x and y .
- **Total Effect** = $T.E. = S.E. + I.E.$

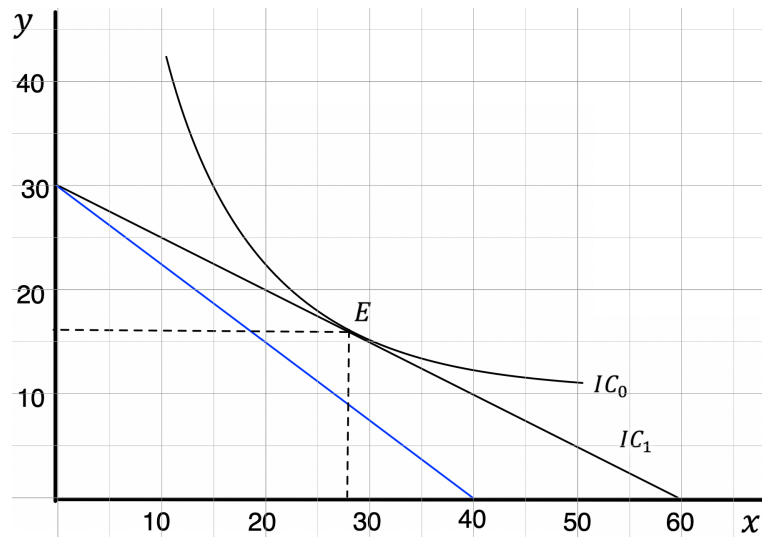
$$= \begin{cases} \Delta x = (x_1 - x_0) + (x_2 - x_1) = x_2 - x_0 \\ \Delta y = (y_1 - y_0) + (y_2 - y_1) = y_2 - y_0 \end{cases}$$

- In the following graphs, draw IC_1 in such a way that x is luxury and inferior.

x is luxury

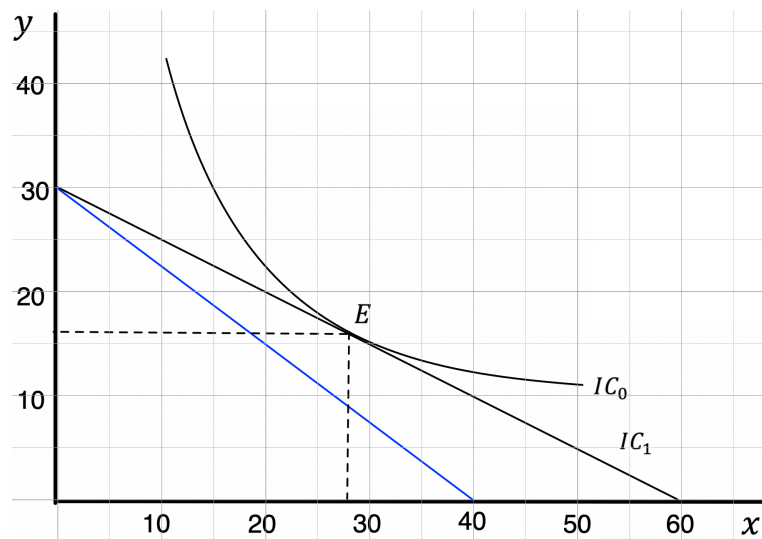


x is inferior



- Can x be so inferior such that when the price p_x decreases, the consumer buys less of x ?

x is Giffen good



- This means that when price p_x increases, the consumer ends up buying more of x . Thus, this violates the Law of Demand even when the consumer is being rational.