

The Theory of Consumer Choice: A Corner Example

- Suppose Jane's utility function over strawberry jelly, J , and peanut butter, N , is $U = 3N + J$. As such, Jane's marginal utility from consuming jelly is $MU_J = 1$ and from consuming peanut butter is $MU_N = 3$. Strawberry jelly is \$5 per jar, and peanut butter is \$10 per jar. Jane has \$100 to spend on peanut butter and jelly. If she maximizes her utility, how much of each good will she consume?

$$U = 3N + J$$

$$MU_N = \frac{\partial U}{\partial N} = 3$$

$$MU_J = \frac{\partial U}{\partial J} = 1$$

$$MRS = MRT$$

$$\frac{MU_N}{P_N} = \frac{MU_J}{P_J}$$

$$\frac{3}{10} = \frac{1}{5} \quad \text{???}$$

$$P_N = 10$$

$$P_J = 5$$

$$Y = 100 = 10N + 5J$$

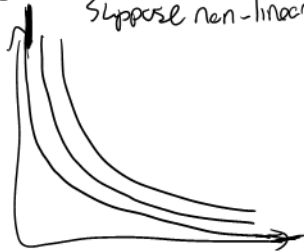
$$N = 10 \quad J = 0$$

$$U^* = 3(10) + (0) = 30$$

What about $N=9, J=2$

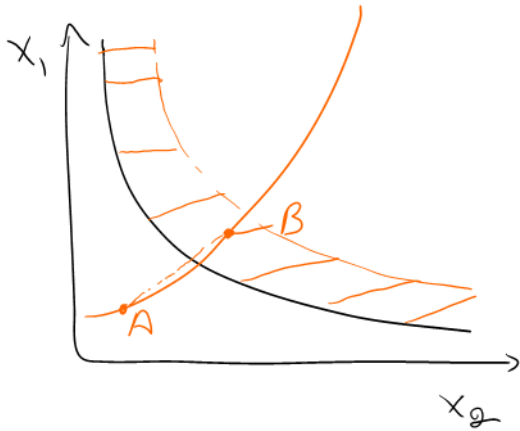
$$U(N=9, J=2) = 29 < 30$$

Suppose non-linear

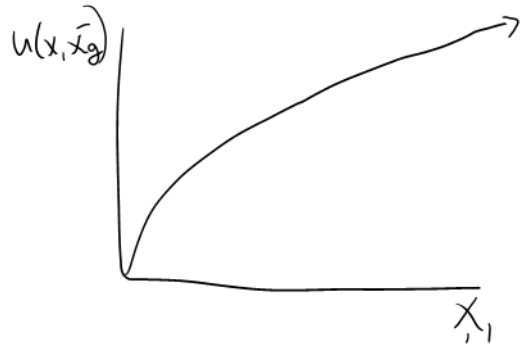


$$U = xy$$

Downward slopes



more is better } utility function
non-satiation }



Why can't they cross?

From A, B it must be the case
that $u_1 > u_2$

From C, D it must be the case
that $u_2 > u_1$

