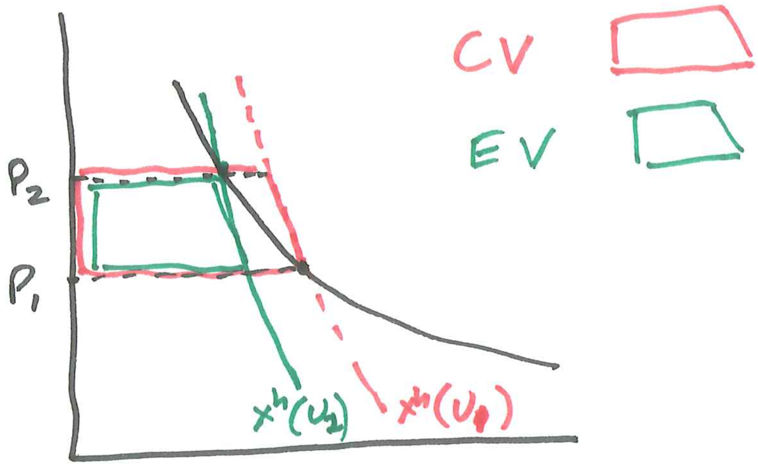
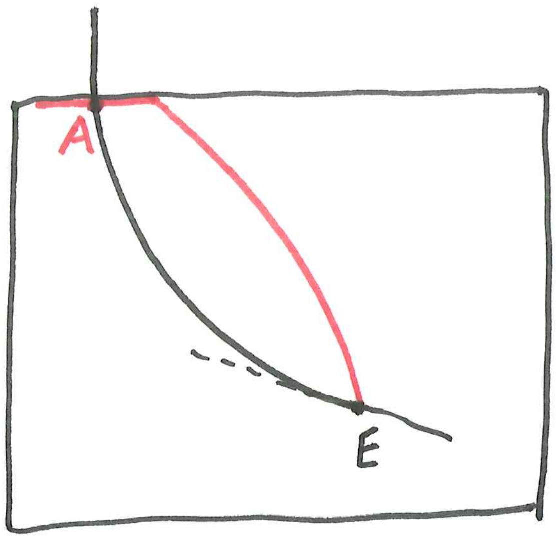
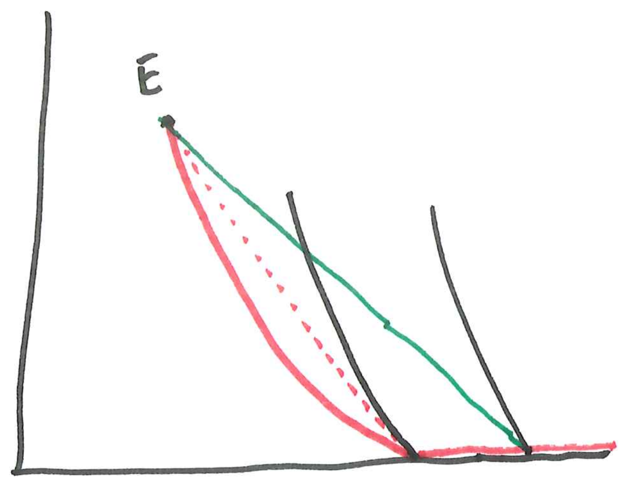
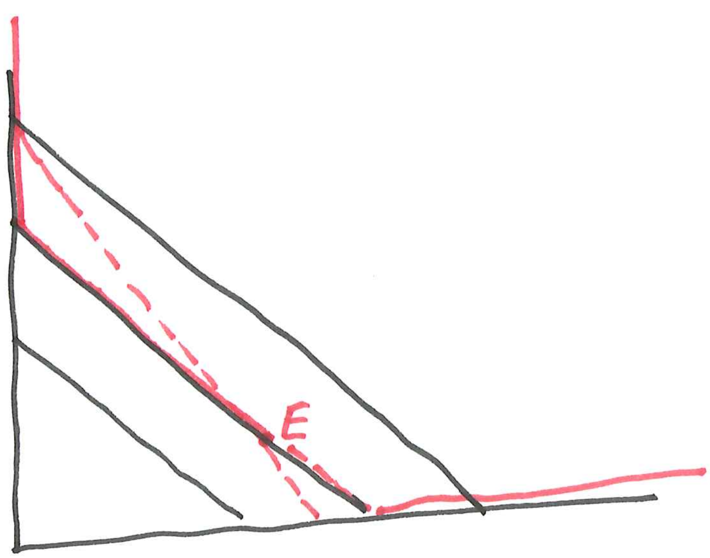
EV, CV under x^h

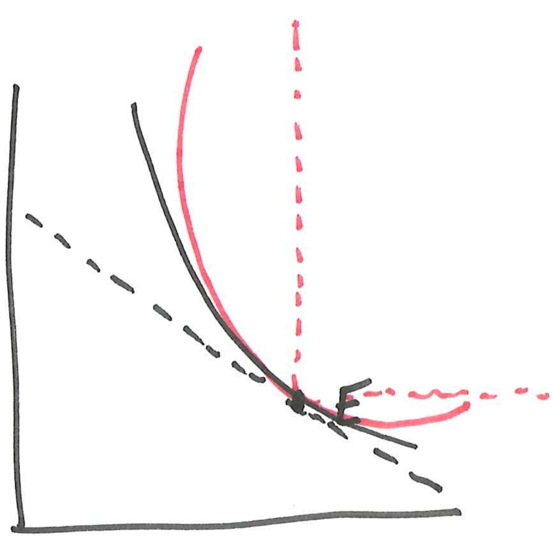
10/22 p1











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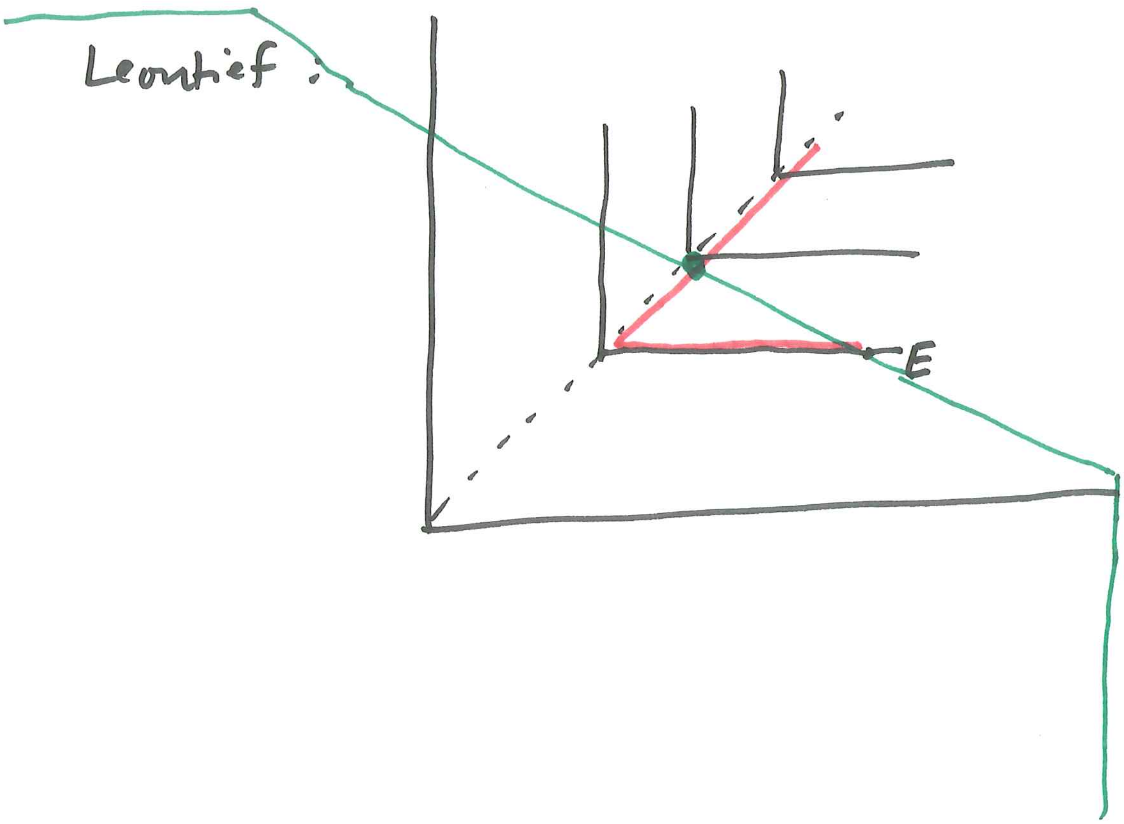
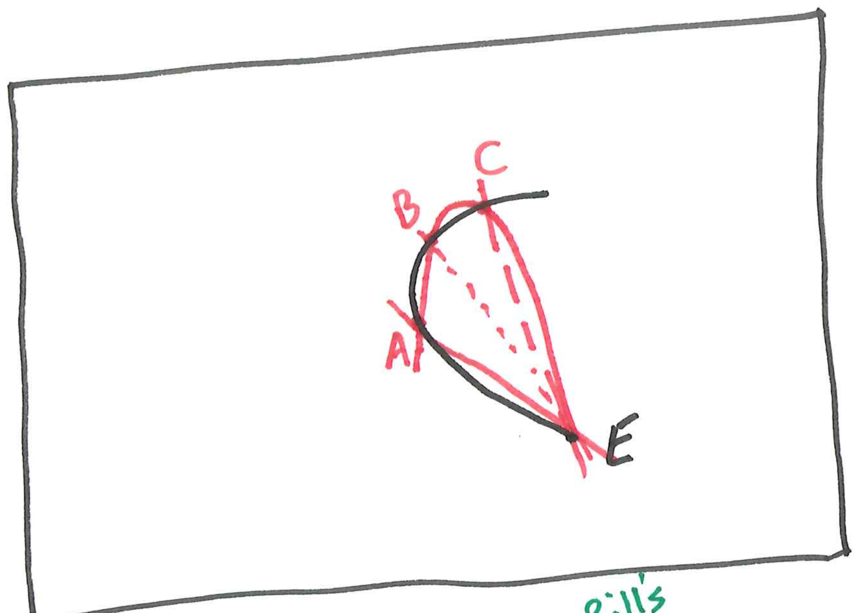
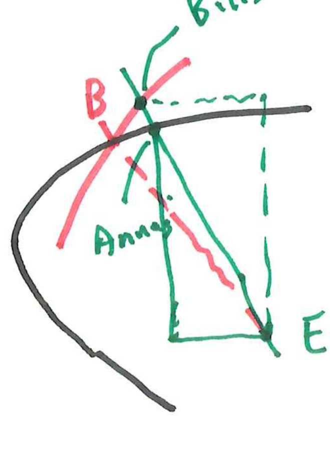
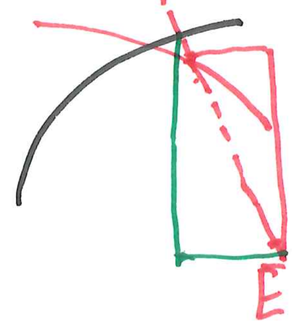
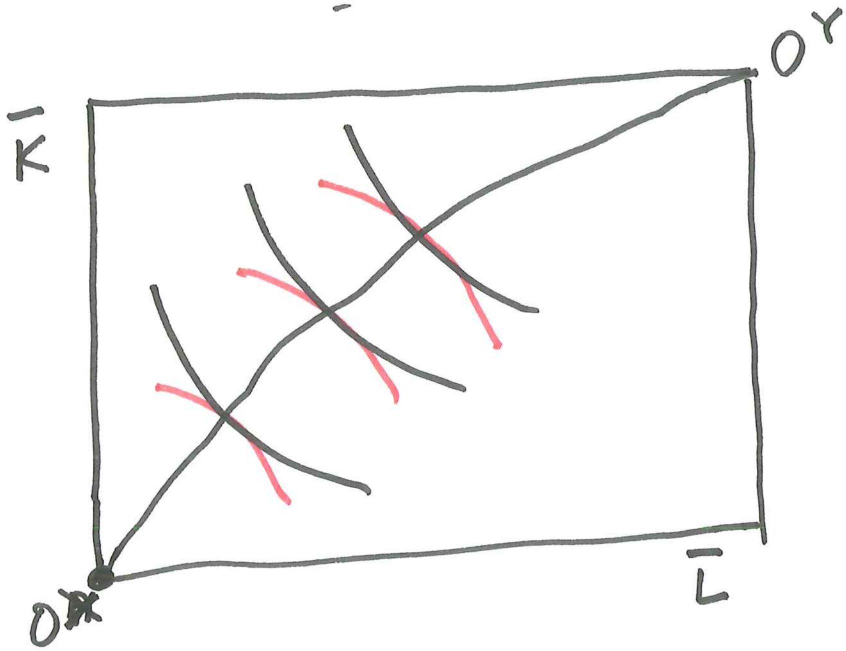


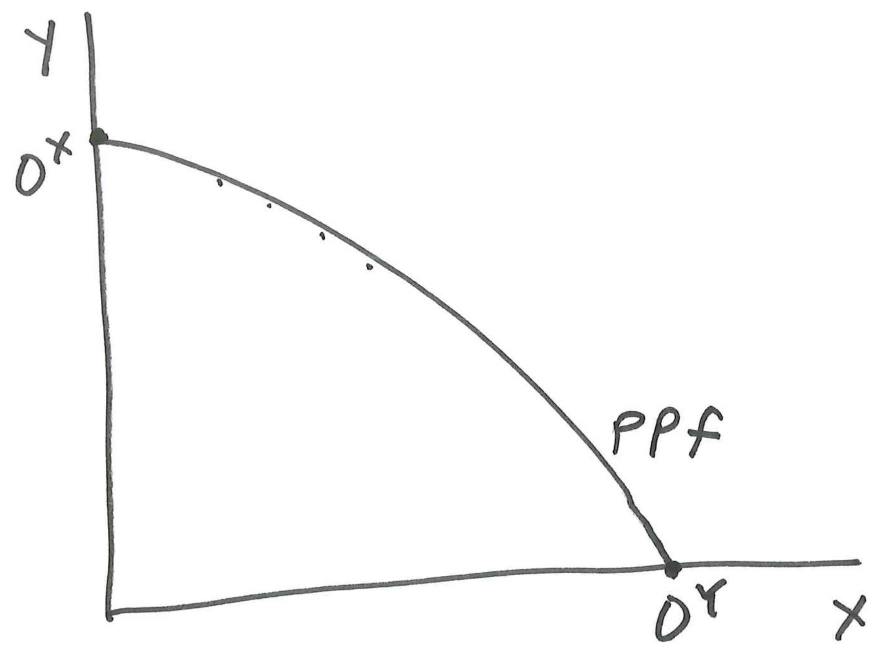






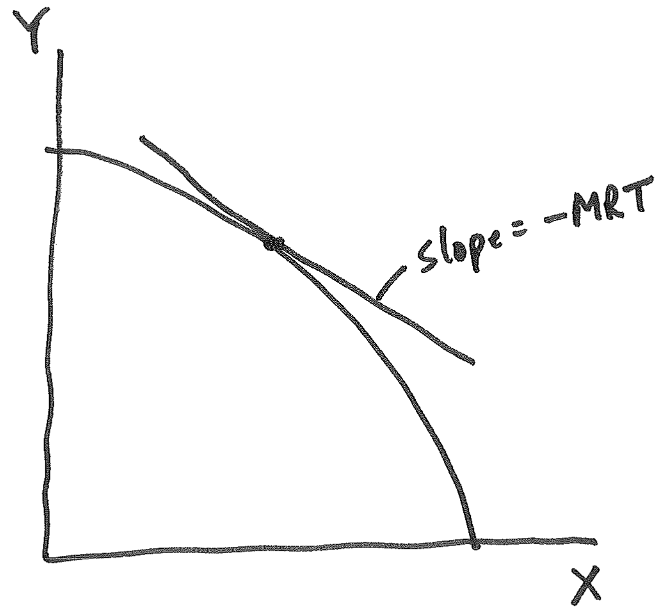
$MRTS^X = MRTS^Y$





Product Mix

$$\frac{U_X^B}{U_Y^B} = \underbrace{\frac{Y_K}{X_K}}_{\text{MRT}}$$



Along ppf :

$$K^X + K^Y = \overline{K}$$

$$dK^X + dK^Y = 0$$

$$\frac{dX}{X_K} + \frac{dY}{Y_K} = 0$$

$$\frac{dY}{dX} = -\frac{Y_K}{X_K}$$

$$X_K = \frac{\partial X}{\partial K^X} \Rightarrow dK^X = \frac{dX}{X_K}$$

$$Y_K \Longrightarrow dK^Y = \frac{dY}{Y_K}$$

$$C^X = rK^X + wL^X$$

$$MC^X = r\frac{\partial K^X}{\partial X} + w\frac{\partial L^X}{\partial X}$$

$$= \frac{r}{X_K} + \frac{w}{X_L} = \frac{rX_L + wX_K}{X_K X_L}$$

$$= \frac{r + w\frac{X_K}{X_L}}{X_K}$$

$$MC^Y = \frac{r + w\frac{Y_K}{Y_L}}{Y_K}$$

$$\frac{MC^X}{MC^Y} = \frac{r + w\frac{X_K}{X_L}}{X_K} \Bigg/ \frac{r + w\frac{Y_K}{Y_L}}{Y_K}$$

on the ppf : $\dfrac{MC^X}{MC^Y} = \dfrac{Y_K}{X_K}$

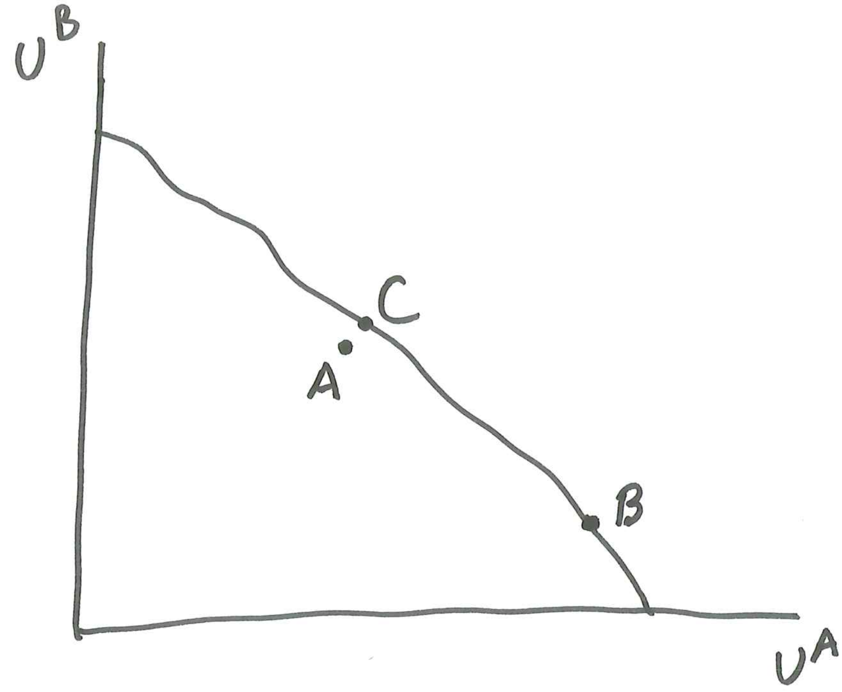
In perfect competition:

$$\frac{MU^X}{MU^Y} = \frac{P^X}{P^Y} = \frac{MC^X}{MC^Y}$$

First Optimality Theorem of Welfare Econ:

Every competitive equilibrium is Pareto efficient

Second Optimality Theorem of Welfare Econ: Every Pareto efficient outcome <u>can</u> be generated as a Competitive Eq$^{\underline{n}}$. by suitable lumpsum taxes + transfers



Theory of Second-Best.

When all conditions for competitive eq$^{\underline{m}}$ are not satisfied, it is no longer the case that satisfying one more condition is welfare improving.

Robinson Crusoe economy