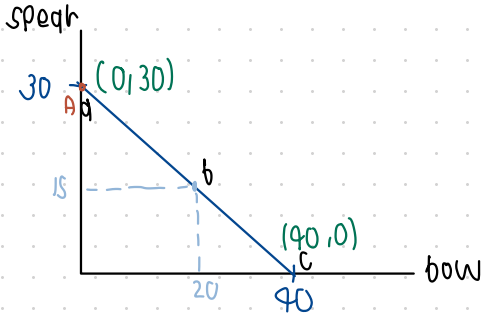


1. a)



at point a and c, all of resources are fully utilized on different products.

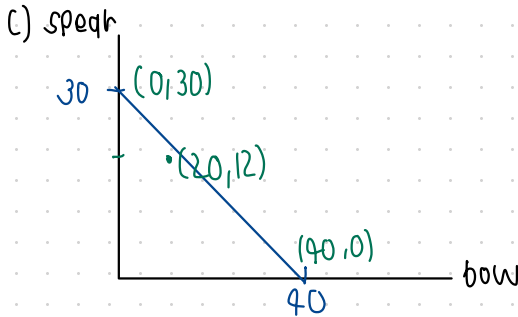
to move b to a, lose 20 bows
gain 15 cars

to move b to c, lose 15 cars
gain 20 bows

b) opportunity cost of spear in terms of bow

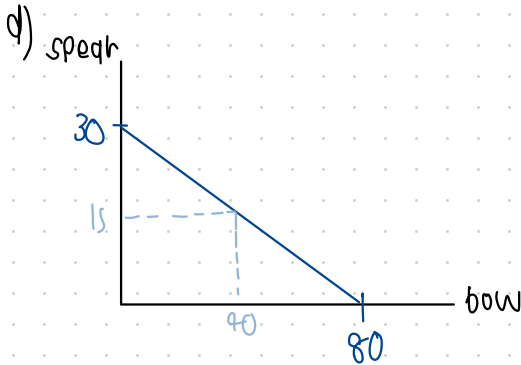
gain 15 spears, lose 20 bows
gain 1 spears, lose 1.33 bows

\therefore opportunity cost of spear is 1.33 bows



$$20(4) + 12(3) = 80 + 36 = 116$$

it is possible, but not efficient because the resources are not fully utilized.



PPC will be flatter due to increased in amount of bow that can be produced.

opportunity cost for a spear is

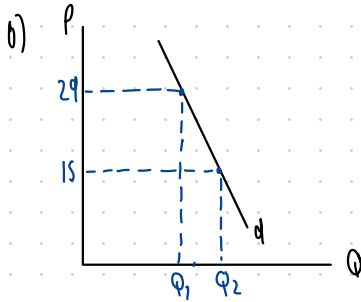
gain 15 spears lose 40 bows
gain 1 spears lose 2.667 "

\therefore 2.667 bows.

2. a) price elasticity of demand (ϵ_D) = $\frac{\% \Delta Q_d}{\% \Delta P}$

$$= \left(\frac{21,000 - 20,000}{20,000} \right) / \left(\frac{29 - 15}{15} \right)$$

$$= -\frac{21}{130} = -0.16 \text{ (inelastic)}$$



MRT is price inelastic. Therefore, price reduction will cause a small change in total revenue

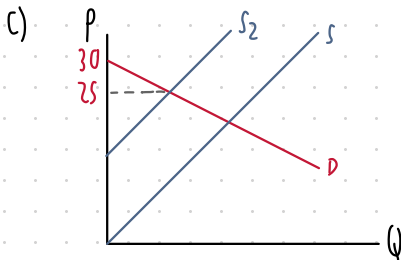
3. a) $\Sigma = \frac{P}{Q} \cdot \frac{\Delta Q}{\Delta P}$

$$\triangleright \Sigma_d = \frac{20}{80} \cdot \frac{120 - 80}{15 - 20} = -2 *$$

$$\triangleright \Sigma_s = \frac{20}{80} \cdot \frac{100 - 80}{25 - 20} = 1 *$$

b) consumer surplus = $\frac{1}{2} \times 10 \times 80 = 400 *$

producer surplus = $\frac{1}{2} \times 20 \times 80 = 800 *$



$$\text{consumer surplus} = \frac{1}{2} \times 5 \times 40$$

$$= 100 *$$

$$\text{producer surplus} = \frac{1}{2} \times 10 \times 40$$

$$= 200 *$$

\therefore both consumer and producer surplus decrease

d) there is no deadweight loss because the equilibrium is achieved

$$9. a) \frac{MU_X}{MU_Y} = \frac{P_X}{P_Y} \longrightarrow 4.5 = \frac{P_X}{10}$$

$$\hookrightarrow \left| \frac{\Delta Y}{\Delta X} \right| = \left| \frac{9-18}{4-2} \right| = 4.5 \quad P_X = 45 \text{ \#}$$

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

$$\frac{9}{2} = \frac{180}{P_Y}$$

$$P_Y = 40 \text{ \#}$$

$$c) \text{ marginal utility} = \frac{MU_Y}{MU_X} = \left| \frac{\Delta Y}{\Delta X} \right|$$

$$= \left| \frac{9-18}{8-4} \right| = \left| \frac{-9}{4} \right| = 2.25 \text{ \#}$$

$$d) \text{ point A ; } |MRS_{XY}(a)| = 2.5$$

$$B ; |MRS_{XY}(b)| = \left| \frac{4-9}{4-4} \right| = \left| \frac{-3}{2} \right| = 1.5$$

$$C ; |MRS_{XY}(c)| = \left| \frac{2-6}{10-6} \right| = \left| \frac{-3}{4} \right| = 0.75$$

\therefore When consumer consume more avocado, marginal utility went down,

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