Exercise 3

1. The Keynesian consumption function assumes that $0 < MPC < 1$; what is the basis for such assumption?

: the function measures how much the consumption increases for every 1 unit earned. Therefore, you can not consume more than your income, so $0 < MPC < 1$

$C = a + by$ (a = autonomous consumption)

2. Assume a closed economy with no government let the autonomous consumption be 200 and mps be 0.3. Draw and write equations for both saving and consumption functions.

$a = 200$

$MPS = 0.3$

$MPC + MPS = 1$

$MPC + 0.3 = 1$

$MPC = 0.7$

con func

$C = a + by$ →

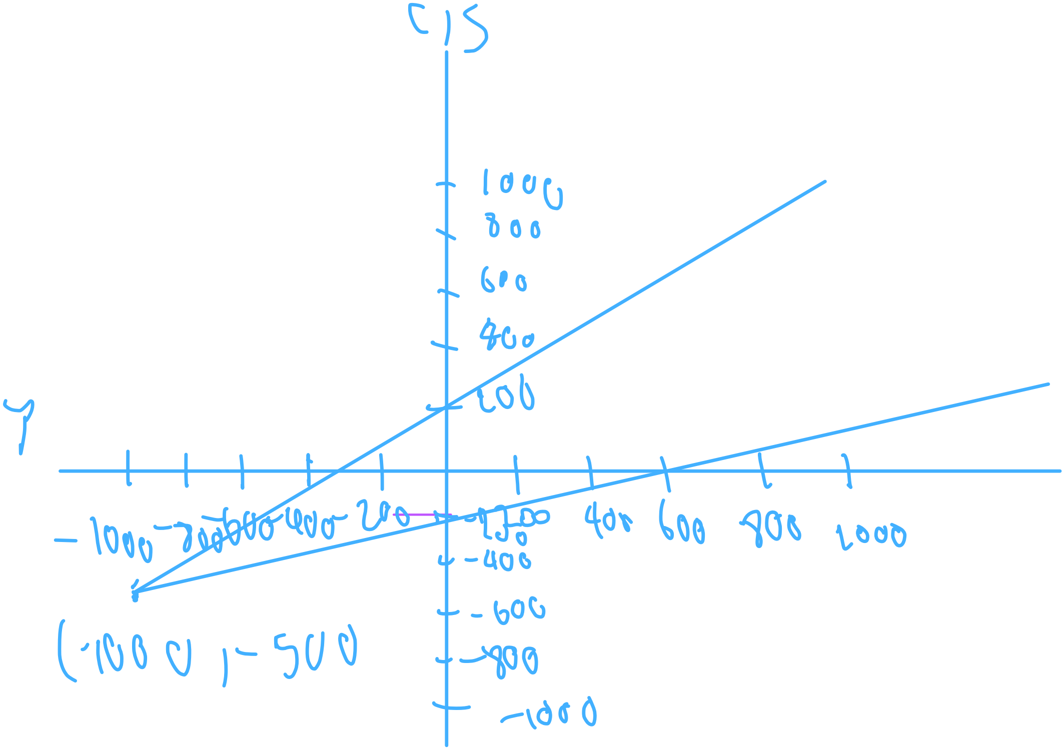
$C = 200 + 0.7y$

$S = y - C$

$S = y - (200 + 0.7y)$

$= y - 200 - 0.7y$

$S = 0.3y - 200$



c)s
y
1000
800
600
400
200
-1000
200
400
600
800
2000
-400
-600
-800
-1000
(-1000, -500)

3. Let the saving function be $S = -150 + 0.35Y$. Find and draw the consumption function

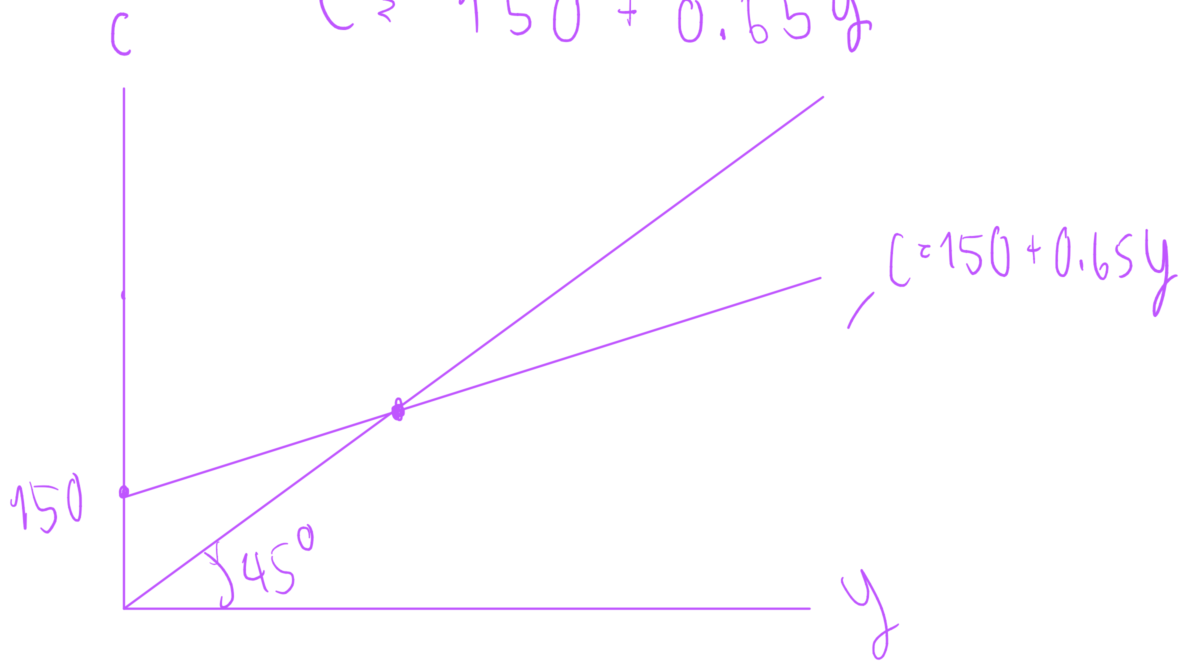
$$MPC + MPS = 1$$

$$MPC + 0.35 = 1$$

$$MPC = 0.65$$

$$C = a + by$$

$$C = 150 + 0.65y$$



4. How do the following affect the AE graph (i.e. explain how the graph changes) and the equilibrium output

- All firm managers decide to buy fewer machines $I \downarrow \rightarrow AE \downarrow \rightarrow Y^* \downarrow$

less investment leads to
AE decreases → graph shift down
so, the business should produce less to meet the demand and adjust to equilibrium = $Y^* \downarrow$

- The government decide to build more roads will not affect anything.
$G \uparrow \rightarrow AE \uparrow \rightarrow Y^* \uparrow$

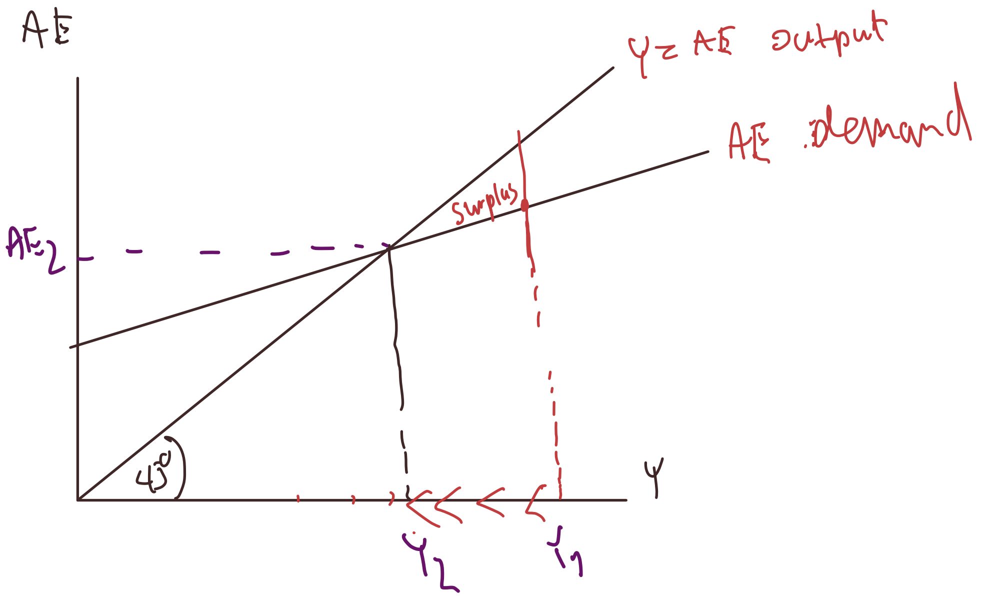
- The citizens decide to save more at all income levels
save more → spend less → produce less → graph shift down → less production to adjust to equilibrium

- citizens decide to save more at all income levels.
= MPS increases → MPC decreases → AE ↓ → $Y^* \downarrow$

The gov decides to raise tax.

→ raise tax → less in AE → $Y^* \downarrow$

5. suppose that aggregate output (Y) is greater than aggregate expenditure (AE) Explain the adjustment process towards the equilibrium. Supply > demand



In this case, aggregate output is more than aggregate income, inventories will accumulate, so that business need to cut amount of production to make Y_1 to Y_2

6. Let $C = 60 + 0.6Y$ and $I = 20$. Find the equilibrium output with the saving / investment approach.

$$S = I \qquad I = 20$$

$$S = 0.4y - 60$$

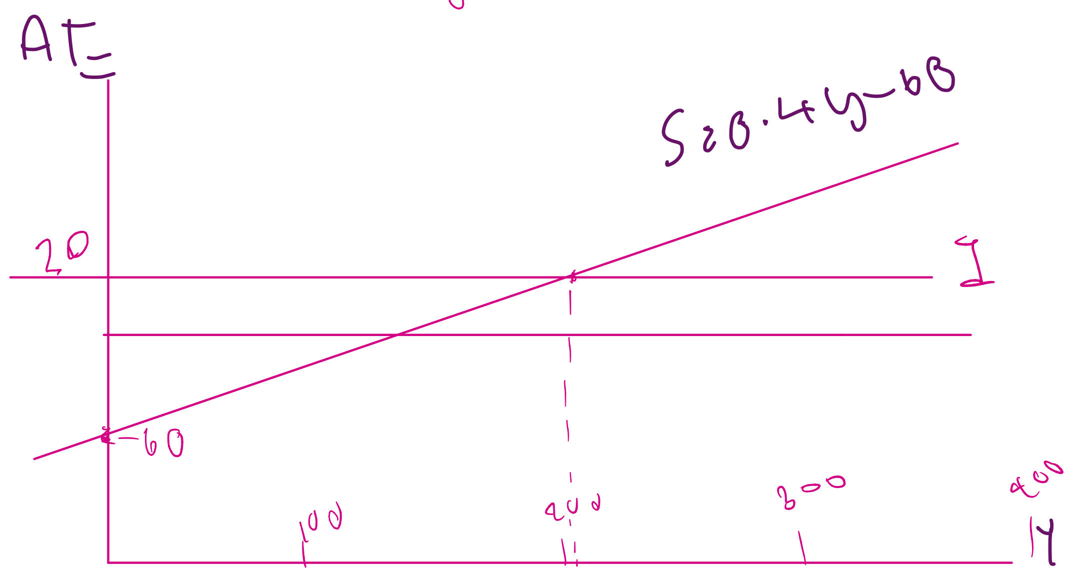
$$20 = 0.4y - 60$$

$$80 = 0.4y$$

$$y = \frac{\cancel{80}^{20} \times 10}{\cancel{4}}$$

A

$$y = 200$$



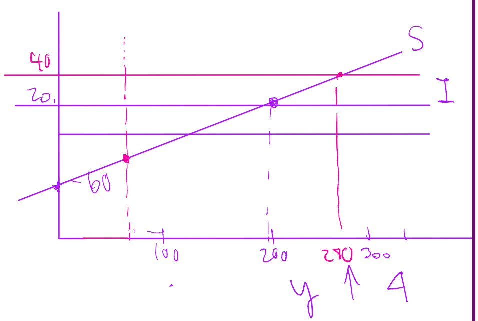
7. let $S = -60 + 0.4Y$ and $I = 20$. Find the equilibrium output with the standard approach. Now, suppose I increases by 20. Find the new equilibrium and the investment multiplier.

$I = S \qquad I = 20$

$20 = -60 + 0.4Y$

$80 = 0.4Y$

$y = 200$



I increase by 20

$0.4Y - 60 = 40$

$0.4Y = 100$

$Y^* = 250$

Investment multiplier

$$= \frac{\Delta Y^*}{\Delta I}$$

$$= \frac{50}{20}$$

$$= 2.5$$

∴ when I increase by 1, output will increase by 2.5 units.

8. With the multiplier effect, an injection of money (for example, investment) can lead to a greater proportional increase in output. Explain how this can happen.

So I = investment, when money injected, firms have more money to operate the business, for example buy new machine or increase labor which will increase productivity and increase in output.

9. How is the investment multiplier related to MPC? Explain the intuition behind such relationship. (Hint: Question 9)

$$\frac{\Delta Y}{\Delta I} = \frac{1}{1 - \text{slope of AE}} = \frac{1}{1 - MPC}$$

when MPC ↑, it gives higher investment multiplier
: when there is expenditure, firm recieve more money, so their MPC is increase. Therefore, more money in circular flow and increase size of multiplier and change output

10. Paradox of thift is a contradict. when people decrease their consumption and try to save more money, they ended up to save less money.

so, when saving is increase ↑ the money is leakage so there are lower amount of money inject in the economy, firm has less money to invest in their business and reduce wage for employee which lead to lower income and you can save less