

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

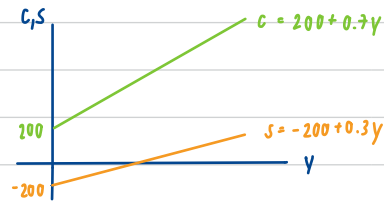
People will consume more as their income increases. However, they can't consume more than their increase in income.

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.

$$MPC = 1 - 0.3 = 0.7$$

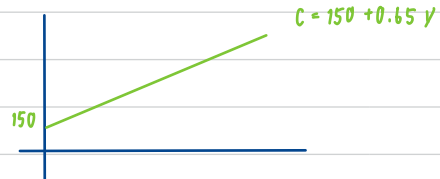
$$C = 200 + 0.7y$$

$$S = -200 + 0.3y$$



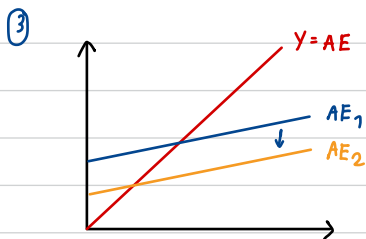
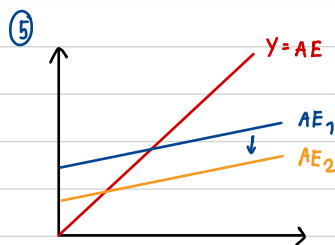
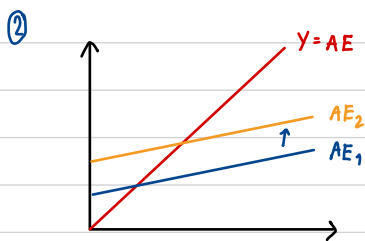
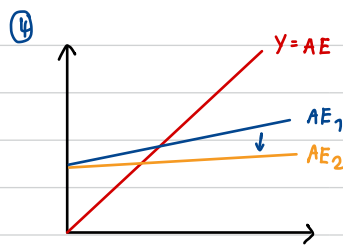
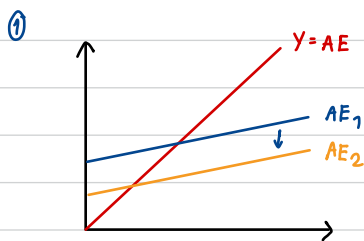
3. Let the saving function be $S = -150 + 0.35Y$. Find and draw the consumption function.

$$C = 150 + 0.65y$$



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

- All firm managers decide to buy fewer machines. $I \downarrow \rightarrow AE \downarrow \rightarrow Y^* \downarrow$
- The government decides to build more roads. $G \uparrow \rightarrow AE \uparrow \rightarrow Y^* \uparrow$
- The citizens decide to save more at all income levels. $S \uparrow \rightarrow AE \downarrow \rightarrow Y^* \downarrow$
- The citizens decide to save larger proportion of income. $\overset{MPS \uparrow, MPC \downarrow}{C = A + bY} \rightarrow AE \downarrow \rightarrow Y^* \downarrow$ slope $\downarrow$
- The government decides to raise tax. $T \uparrow \rightarrow C \downarrow \rightarrow AE \downarrow \rightarrow Y^* \downarrow$



5. In the Keynesian Cross Model, suppose that aggregate output is greater than aggregate expenditure. Explain the adjustment process towards the equilibrium.

The aggregate output is more than desired in aggregate expenditure means that Y is greater than Y^* . It is excess in supply that leads to surplus so the inventory increases. Therefore, the production should be reduced.

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

$$S = I$$

$$S = -60 + 0.4Y$$

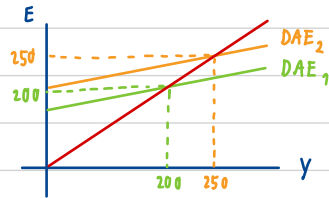
$$-60 + 0.4Y = 20$$

$$0.4Y = 80$$

$$Y = 200$$

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.

$$\begin{aligned}
 C &= 60 + 0.6Y & I &= 20 \\
 \textcircled{1} \quad Y &= DAE \\
 &= I + C + G \\
 Y &= 20 + (60 + 0.6Y) \\
 0.4Y &= 80 \\
 Y &= 200
 \end{aligned}$$



$$\begin{aligned}
 \textcircled{2} \quad I &= 40 \\
 Y &= DAE \\
 Y &= 40 + (60 + 0.6Y) \\
 Y &= 100 + 0.6Y \\
 0.4Y &= 100 \\
 Y &= 250
 \end{aligned}$$

$$\begin{aligned}
 &\text{Investment multiplier} \\
 &= \frac{1}{1-MPC} \\
 &= \frac{1}{1-0.6} \\
 &= 2.5
 \end{aligned}$$

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.

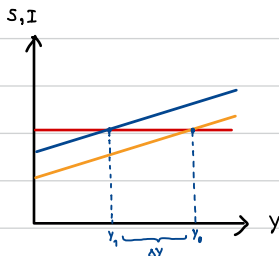
After the money is injected, in investment, firms will have more money to operate their business. They will be able to invest in new machinery and hire more labor. Therefore, when labor income goes up, aggregate demand also increases. As a result, the output increases.

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

$$\text{Investment multiplier} = \frac{1}{1 - \text{MPC}}$$

$\text{MPC} \uparrow \rightarrow \text{investment multiplier} \uparrow$

10. What is the Paradox of Thrift? Explain it with diagram.



Increasing autonomous saving will lead to decreasing aggregate demand.

$$S \uparrow \rightarrow C \downarrow \rightarrow AE \downarrow \rightarrow Y \downarrow$$

Therefore, saving will decrease or stay the same.