1. ***Explain why AD is downward-sloping [that is, how AD is derived], using the money market diagram and the IS-LM.***

AD curve shows the negative relationship between price and level and output. When the price level goes up there is a fall out in AE. an increase in P will reduce the real money supply, smaller real money supply will drive up interest rate, higher interest rate discourages investment, lower investment reduces output. When P increases, like the contractionary monetary policy, the money market which is the LM curve, P increases the money supply goes down and i goes up. In the goods market which is the IS curve, i increases, I decreases, AE decreases and Y decreases which shows it as a downward sloping curve, due to the output decreasing and the price level increasing.

The 3 main reasons behind why the AD is downward-sloping is when the price level increases and the AD decreases. The three effects behind the AD downward-sloping is wealth effect, interest rate effect, and the international trade effect. Wealth effect is when the PL goes up, and any real wealth decreases, real terms will fall, and the value of wealth means that individuals can buy less. Interest rate effect, this is shown in the IS LM diagram. PL goes up, interest rate goes up, interest rate goes down then investment goes down. Lastly, the international trade effect, when the PL goes up we have inflation in the economy, domestic goods become more expensive, export decreases reducing foreigners to buy from us, and import increases. There is a negative relationship between AD and PL.

2. ***What is Sticky Wage Theory? Explain why SRAS is upward-sloping [that is, how SRAS is derived], using the sticky wage theory, labor demand diagram, and production function.***

Sticky wage theory is an economic theory that shows how wages adjust slowly to the change in the labor market conditions. This is when the price goes up and the output goes up as well. This occurs in the shirt run, and wages are fixed. When the price level goes up when everything gets expensive. Employers must still get paid, and they get paid the same amount. Employees aren't happy about this. However, firms are happy about this. This is because the cost of production is lower, and profit is increasing. Due to this, firms will be producing more, Y goes up.

SRAS is the short-run aggregate supply curve, it allows us to see how firms in an economy react to sticky prices. It shows the positive relationship between price level and output. When there is a sticky price in the economy the SRAS curve is sloped upward. This shows us that when the price level is increased it'll lead to more output. It also slopes upward because at least one price is inflexible. It also shows the tradeoff between inflation and unemployment. Due to the high inflation which means there's an increase in output. Higher inflation is also because of the lower unemployment in the short-run.

3. ***Explain why LRAS is vertical***

Your wage is not fixed. The worker can negotiate their wage. When the price level goes up during inflation, workers ask for higher wages. The wage and price will rise in the same proportion. W/P will be the same and both increase. As a result, the real wage will be the same. You raise the same amount of labor, the output will remain the same. You get a vertical line. **When price increases, nominal wage also increases (workers can negotiate for higher wages), leaving the real wage and hence demand for labor unchanged**

LRAS is vertical, because in the long-run, the potential for output an economy can produce isn't related to price level. It depends on the resources and technology a country has on hand. The LRAS is vertical at the economy's potential output. Once prices have had time to adjust, the output should return to this potential output.

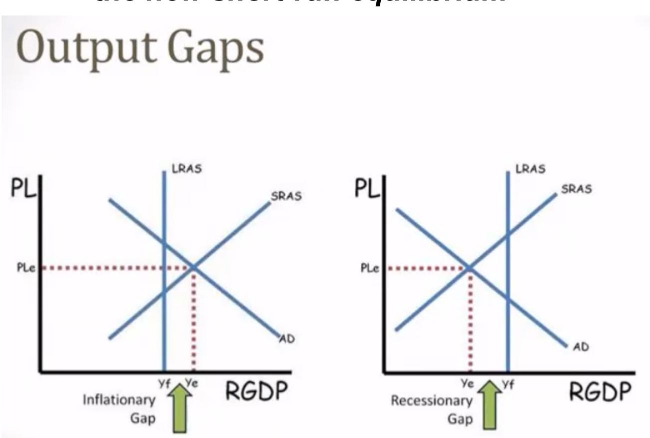
The 2 things that affect the LRAS is which is the quality and quantity of a country's resources. Second, how it can combine those resources to get the aggregate output. When an economy is producing the full employment output, the rate of unemployment should be equal to the natural rate of unemployment. LRAS is also vertical at the full employment level of output because that's the amount that would be produced once prices are fully able to adjust.

4. ***<u>Cetaris Paribus</u> [other things equal], how will each variable/ event affect each curve - shift [to which direction?] or movement?***

| **variable/event** | **AD** | **SRAS** | **LRAS** |
|---|---|---|---|
| P increases | | Movement along the SRAS<br><br>Shift to the Right | |
| G increases | | | |
| T decreases | | | |
| Autonomous C increases | | | |
| Autonomous I decreases | | | |
| M decreases | | | |
| i increases | No effect | | |
| Temporary epidemic (assuming AD unchanged) | No effect | Shift to the left | |
| Permanent increase in population growth | | Shift to the right | |

| | | | |
|---|---|---|---|
| rate (assuming AD unchanged) | | | |
| W increases | | | |
| Bad seasonal weather (natural disasters) | | Shift to the left | |
| Permanent loss in agricultural land due to climate change | | Shift to the left | |
| Discovery of new technology | | Shift to the right and upward<br><br>You hire less workers<br><br>Production function shifts up<br><br>And SRAS shifts to the right | |
| short-term worker training | | | |
| Permanent education reform | | | |

5. ***Suppose the economy faces a negative AD shock (e.g. loss in consumers' confidence)***
- ***What output gap do we have? Draw the AD-AS diagram to show the output gap at the new short-run equilibrium***




The AD-AS model is used to show the different and various stages of the business cycle. This model is used to compare the current output through the short-run equilibrium to the full employment output. This output gap measures the difference between the actual output of an economy and its potential output.

When there is a negative gap that indicates that the economy is producing less than compared to having full employment. This is also called deflationary. On the other hand, a positive output gap means that an economy is producing more compared to the full employment output. This positive output gap is also called the inflationary gap. This happens when demand is very high, and for firms to meet such demands firms will produce more output.

- ***If the government wants to correct such output gap, what policies can it implement? Give examples***

The government can intervene by **using demand-side policies (fiscal or monetary) to shift the AD or using supply-side policies to shift the AS.** The government can use fiscal policy to make the output gap smaller and possibly close it. Expansionary, which is from the fiscal policy will make the aggregated demand higher, this is through government spending or making taxes lower. This can help close the negative output gap.

- ***If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium***

The government does not need to intervene if they wish not to. They can let the economy solve its own problems. This is done through SRAS. This is called the **self-correcting mechanism, also known as the "hands-off" approach.** This approach can help bring the economy back after a shock. In the long-run shocks don't matter as much as they do in the short-run. This approach focuses on price adjustment. During a shock, prices will adjust and that is what will help bring the economy back to long-run equilibrium.

When there is inflation employees with real wages will face a decrease. Employees want higher wages, which makes the cost of labor and production increase. This means that the SRAS decreases. This happens because expectations of further inflation and higher recourse costs lead firms to produce less and charge higher prices. Output will drop and price level will increase.

6. ***Suppose the economy faces a temporary, positive AS shock***
    - ***Give one example of a temporary, positive AS shock***

- Consumer's confidence can raise auto C and AD
- Investors' optimism can raise auto I and AD

Or when the government has decided that they'd give stimulus checks, or due to covidence they'll ease down on the monetary policy. As positive shocks will mean an increase in production and a reduction in employment. Or when there is a decrease in oil mprices,

    - ***If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium***

7. ***Suppose the economy faces a permanent, negative AS shock***
    - ***Give one example of a permanent, AS shock***

A negative shock could be an increase in oil prices, as this would mean that there is an increase in input prices which will make the SRAS drop. As negative shocks would mean a decrease in output and increase employment.

- ***If there is no government intervention, explain with the AD-AS diagram how the economy will return to the long-run equilibrium***

8. ***In macroeconomics, <u>money neutrality</u> is the idea that a change in the stock of money [M] does not affect real variables, like employment and real GDP. is this true in the AD-AS model?***

***[hint: when the central bank changes money supply, M, does this affect output in the long run, i.e. full-employment Y?]***

The money neutrality is a theory that states that money supply only has effects over the nominal variables and not real variables. The theory shows that changes in supply of money does not change the economy. The aggregate supply will remain constant. Aggregate demand drops and shifts to the right.

In the short run, there is a drop in the interest rate, an increase in the output level (is higher than its natural level, and an increase in the price level.

In the long run due to the self-correcting mechanism everything shifts to the left, there is no change in the interest rate (it rises back to its initial level), no change in the level of output (it falls back to its initial natural level, and a higher price level than at the outset.

9. ***Based on the question above, what can the government do to change output in the long run?***

***[hint: monetary & fiscal policies are demand-side policies, but do we have other alternatives?]***

The fiscal policy refers to the policies affecting government spending or tax policy. To get the production to increase to be able to get an increase in the aggregate demand and to close the deflationary gap.

The monetary policy refers to the policies that affect the interest rate or the money supply. This involves the central banks who have control over the interest rates and money supply. An expansionary monetary policy will help increase the aggregate demand.

The demand side policies, is when the government tries to increase or decrease aggregate demand to affect output, employment and inflation. This policy can be placed within both fiscal and monetary policies. It's used for short-term changes. When the inflation is too high, the government can increase the interest rate to bring the economy down. It tries the recessiaonry output gap to reduce the inflation.

10. ***Economists usually have macroeconomic goals of low employment and low inflation. It is also believed that economists face the trade-off between these goals, especially in the short-run. Use a relevant diagram to explain the trade-off. Why does the trade-off no longer exist in the long run?***

The rational expectations, which shows why tradeoff is in the short run and not in the long run. This is because of the money neutrality and monetary variables.

11. ******The IS-LM is for short-run analysis, while the AD-AS is for long-run analysis. Now, let's link them together. Use the IS-LM and Ad-AS models to show the policy effect in both short run and long run.***

***[hint: in the long run, what happens to P and in the AD-AS model? How ill this change in P affect the IS-LM model?]***