Question 1

(a)(i)	With reference to Figure 1, state the change in the number of street-hail trips and ride-hail trips from 2021 to 2023. [1]		
	The quantity of street-hail trips has decreased while the quantity of ride-hail trips has increased [1].		
(a)(ii)	Using Extract 1 and a demand and supply diagram, give two reasons for the trend		
(-,(,	observed in the ride-hailing market in (a)(i). [4]		
	Demand for ride-hail rides has increased due to changes in consumers' taste and preferences. Consumers prefer knowing the fare in advance for ride-hail rides as compared to the uncertainty of fares for street-hail rides. [1]		
	OR The increase in surcharges for street-hail rides led to an increase in demand for ride- hail rides, given that street-hail rides and ride-hail rides are substitutes (in demand), with their cross-price elasticity of demand (XED) > 0.		
	Supply of ride-hailing rides has also increased, as more drivers are also choosing ride- hailing due to the cheaper rental of a private car as compared to a taxi. [1]		
	The changes in demand and supply are illustrated by a rightward shift in the demand curve from D_0 to D_1 and a rightward shift of the supply curve from S_0 to S_1 , as shown in Figure 1 below. [1]		
	The combined changes in demand and supply results in a change from the original equilibrium (P_0 , Q_0) to the new equilibrium (P_0 , Q_1) with a larger equilibrium quantity, corresponding to the observed trend of a larger quantity of ride-hail trips. [1]		
	Price		
	Figure 1: Market for ride-hailing in Singapore		
	2m for explaining any two DD or SS factors. 2m for DD/SS diagram showing shift in DD/SS and explaining change in quantity.		
(b)	Define price discrimination and explain why imposing location surcharges for taxi rides can be considered a form of 3rd degree price discrimination [3]		
	Price discrimination occurs when a producer charges different prices for the same product for reasons not associated with differences in cost. [1]		

(4)	Figure 2: Negative externality
	O Q_s Q_e Quantity of rides
	D MPC
	Cost/Benefits MSC = MPC + MEC
	For the quantity in between Q_s and Q_e , MSC is greater than MSB, suggesting that the cost to society is greater than the benefit received from the consumption and production of ride-hailing. This overproduction and overconsumption of ride-hailing due to negative externality results in a deadweight loss , which is indicated by the shaded area CDE. [2]
	With reference to Figure 2, assuming that there are no positive externalities in the consumption and production of ride-hailing, MPB is equal to MSB. When left to the free market, the consumption and production of ride-hailing would be at the level where MPB equates MPC (point E) at OQe. However, the socially optimum level of consumption and production of ride-hailing is at OQs, where MSB equates MSC (point D). Since OQe > OQs, there is overproduction and overconsumption at the free market equilibrium.
	For instance, carbon emissions from vehicles used in ride-hailing contributes to global warming, which negatively affects third parties who are not compensated for their suffering. These third parties include residents who are not involved in consumption or production in the ride-hailing market. This contributes towards the marginal external costs (MEC) and as a result the marginal private costs (MPC) diverges from the marginal social costs (MSC) as MSC = MPC + MEC. [1]
	ride-hailing market. [4] The case of carbon emissions in the ride-hailing market can cause negative externality, which is a form of market failure where resources are not being allocated efficiently. Negative externalities refer to the external spillover cost incurred without compensation by third parties, who are neither consumer or producer, arising from the production or consumption of a good. [1]
(c)	Using a diagram, explain how carbon emissions can cause market failure in the
	In this case, a surcharge (i.e. different price) is levied on the first group of consumers who hail a ride to or from a specific location such as the airport, while those who hail a ride to other locations do not pay a surcharge. [1]
	Location surcharges are considered 3 rd degree price discrimination as the taxi companies divide their consumers into different groups (by location and time) and charge a different price to each group. [1]

Command word	Discuss – present 2 sides with an evaluative conclusion
Concept	How rival firms will be disadvantaged by lower profits (i.e. lower TR of higher TC)
Context	Ride-hailing industry
R1: Rival firms	will be disadvantaged due to lower demand, lower AR/MR and hence
lower profits.	
R2: Rival firms	will be disadvantaged due to higher AC/MC and hence lower profits.
Evaluative co	onclusion: Substantiated judgment on whether rival firms will t
uisauvaillayeu	<u>.</u>
Requirement	Suggested Answer
Introduction	Firms are assumed to be profit-maximisers.
	Rival firms include other ride-hailing providers and taxi companies
	Grab's takeover of Trans-Cab will affect profits of rival firms through
	reduced revenue and higher costs
	, , , , , , , , , , , , , , , , , , ,
R1: Rival	Grab becoming a larger firm will mean they have greater econom
firms will	of scale resulting in a lower unit cost of production.
face lower	• This is due to cost savings by having their maintenance worksho
demand,	service a larger fleet of vehicles, or spreading out their advertis
lower	costs over a larger fleet of vehicles.
revenues	This would allow Grab to offer rides for a lower price and be me
and hence	readily available to respond to customers' ride-hailing requests. O
lower profits	time, customers would prefer to hail a ride from Grab, given t
(TR – TC).	greater certainty of securing a ride.
	This would reduce demand for ride-hailing services offered by ri
	firms, resulting in a fall in average revenue (AR).
	The demand for ride-hailing services offered by rival firms wo
	decrease and also become more price elastic, due to the bet
	substitute product offered by Grab (D_0 to D_1 in Figure 3 below).
	• As shown in Figure 3, the original market equilibrium of P_0 and Q_0
	determined by the profit-maximising condition of MC=MR. With
	decrease in demand, the demand of AR curve shifts lettwards a
	election. This would cause the price charged and output produced
	elastic. This would cause the price charged and output produced each rivel firm to then decreases (P_{0} and Q_{0} to P_{1} and Q_{1}). Since pr
	and output has decreased, the amount of profite has also fallen fr
	the leaves checked even (P = AC × C) to the eventler checked even
	the larger shaded area $(P_0 - AC_0 \times Q_0)$ to the smaller shaded and
	$(\mathbf{P}_1 - \mathbf{A}\mathbf{C}_1 \times \mathbf{Q}_1).$
	• Evidence: "The shortage of drivers as well as the high costs
	maintaining a large vehicle fleet affect the ability of rival platforms
	Tuitil trip requests and, over time, make them less attractive
	passengers and drivers."



Evaluative conclusion	 Rival firms may benefit from higher revenue or lower costs due to spillover effects of Grab's strategies to increase its own profits. For example, Grab's marketing efforts may change consumer's preference for taxi trips to ride-hailing trips, hence increasing demand and AR for rival firms offering ride-hailing trips. (Alternative example: lower TC) Grab's efforts at lowering costs and improving productivity may also benefit other ride-hailing providers, e.g. those who do not already own a platform and can use Grab's platform to provide services OR rival firms may be able to copy innovation efforts since barriers to entry to join the rail-hailing market may be low (according to Grab's response in Extract 3).
Discuss the fa address market market. [10]	ctors a government should consider when adopting policies to the tinefficiencies caused by market dominance in the ride-hailing
Command word	Discuss – present 2 sides with an evaluative conclusion
Concept	 Decision-making framework. Benefits, costs, constraints, unintended consequences Government intervention of market dominance Allocative inefficiency, productive inefficiency, dynamic inefficiency
market EV R1: Limita intervention R2: Costs of g market EV R2: Possit intervention Evaluative co answer.	tions (constraints and unintended consequences) of government povernment intervention due to market dominance in the ride-hailing ole mitigating actions taken by government to overcome costs of onclusion: Substantiated judgment to weigh the factors raised in the
Introduction	A government should adopt the decision-making framework and consider the benefits, costs, constraints, unintended consequences of intervening in the market to address market inefficiencies caused by market dominance, which include allocative inefficiency, productive inefficiency and dynamic inefficiency.
R1: Benefits of government intervention due to market dominance in the ride-hailing market	 A government can consider the benefits of intervening in the market to address market dominance. Market dominance cause market failure due to allocative inefficiency as the price exceeds the marginal cost (P₀ > MC₀) at the profit-maximising equilibrium of P₀ and Q₀. This means that consumers value the last unit of the good more than it costs to produce it. There is underproduction and the socially optimal output level Q_s is higher than the equilibrium output level Q_e. In Figure 5, Q_s is the socially optimal output, and the shaded area shows the deadweight loss due to underproduction.



R2: Costs of	• A government can also consider costs that may result from
government	government intervention.
intervention	• As firms now earn less profit, they would also have a lower ability
due to market	to carry out innovation. This is because there may be a need fo
dominance in	firms to invest accumulated profits to conduct research and
the ride-hailing	development to improve the quality products. Without the same
market	level of profits, there would be lower ability to innovate and
	therefore lower dynamic efficiency.
	• In addition, smaller firms that result from successful governmen
	intervention will mean that they experience higher costs o
	production due to the loss of internal economies of scale.
	For example, a smaller ride-hailing firm will not be able to capitalise
	on spreading out their advertising costs over a larger fleet o
	vehicles, resulting in a higher unit cost of production.
	• The higher costs of production can be shown using Figure 4 in
	Q1(d), where both the average and marginal costs of production
	increases, leading to a higher price and lower output at the marke
	equilibrium.
	This would result in consumers being worse off, since they not
	have to pay a higher price, and assuming that their demand for
	ride-hailing rides remains unchanged, this would mean a lowe
	consumer surplus.
EV R2:	Since there are costs of intervention and potential government
Possible	failure due to government intervention, a government shoul
mitigating	consider whether there is a need and urgency to address marke
actions taken	failure in this market as compared to other markets.
by government	• This may mean comparing deadweight loss arising from
to overcome	different market failures, and choosing to intervene in market
costs /	with the largest market failure.
constraints of	
intervention	
Evaluative	Based on the Theory of Contestable Markets, governments ca
conclusion	prioritisise ensuring there are low barriers to entry and exit in th
	market to enable a contestable market, so that a dominant fire
	would behave competitively due to the threat of potentia
	competition.
	• This will mean that they will not intervene in specific marker
	directly so as to mitigate issues related to government failure

Question 2

(a)	With reference to Figure 2, explain one reason for the change in real wagesin the US from May 2021 to Nov 2022.[2]	
	Real wages fell from May 2021 to Nov 2022 as inflation rate was higher than the nominal wage growth.	
(b)	Using Extract 4 and an aggregate demand and supply diagram, explain why inflation in the US is so high. [4]	
	 "Supply disruptions from Covid and higher food prices after severe storms and drought hurt harvests", leads to higher cost of production for most industries and SRAS falls, shifting the SRAS curve upwards. [1] In addition, massive government spending which is a component of AD increases AD, shifting the AD curve to the right. [1] 	
	• The decrease in SRAS from SRAS0 to SRAS1 leads to an increase in the GPL from P0 to P1. The increase in AD from AD0 to AD1 leads to a further depletion of stock and GPL rises further to P2. Hence the persistent rise in GPL leads to high inflation in the US. [2m for diagram + explanation]	
(c)	Explain how tariffs may worsen inflation. [2]	
	 Inflation may worsen when tariffs raise the prices of imported raw materials which will raise the cost of production of local products which use these resources. [1] The AS will fall, leading to a shortage of goods and services and hence a rise in the general price level (cost-push inflation). [1] 	
(d)	Using a tariff diagram, explain how Biden's proposal to reduce government tariffs will affect government revenue. [4]	
	 Tariffs are taxes levied by the government on imported goods. A reduction in tariff will shift the world supply curve of imports downwards from S_{world} + tariff to S_{world} + reduced tariff [1m with diagram] Assuming the tariff is a specific tax, government revenue from the tariff is given by the quantity of import multiplied by the per unit tariff. [1] As seen in Fig. 1 below, before the tariff reduction, government revenue is area (A + B). After the tariff reduction, government revenue is area (C + B + D). [1] Whether the government revenue rises or falls will depend on the price elasticities of demand and supply. [1] 	

(e)	Discuss whet impact on Jap	Fig. 1: Impact of Tariff Reduction for the easy monetary policy is likely to have a significant [8]
	Command word	Discuss – present 2 sides with an evaluative conclusion
	Concept	Easy monetary policy – cut interest rate
	Context	Impact on economy -> RNY, GPL, employment, BOT
	R1: Explain ho R2: Explain ho economy Evaluative con	w easy monetary policy has a significant impact on Japanese economy ow easy monetary policy does not have significant on the Japanese nclusion: Take a stand and justify
	Requirement Introduction - Give overview	Suggested Answer Japan is adopting an easy monetary policy where they choose to maintain a negative interest rate which has impacts on the four macro aims of the government.
	R1: Explain how easy monetary policy has a significant impact on Japanese economy	 Easy monetary policy will have a significant impact on Japanese economy As negative interest rate leads to both low cost of borrowing and low returns on savings, consumers are more incentivised to borrow to purchase big-ticket items and less incentivised to save. This increases consumption expenditure (C). At the same time, with the lower cost of borrowing, firms would find it more profitable to invest (rightward movement along the MEI) and investment expenditure (I) increases. The increase in C and I would be significant due to Japan's large population size. This would then lead to a significant increase in AD, causing the AD curve shifts to the right from AD0 to AD1 as seen in Fig. 2 below. The rise in AD due to the easy monetary policy would lead to an unplanned depletion of stock which would put an upward pressure on the general price level. Firms will increases the real national output and income. Income-induced consumption increases, and through the multiplier process, the economy would experience a multiplied increase in AD and real national income which increases from Y₀ to Y₁, achieving actual economic growth, since Japan has unemployed resources.



		worsen in the short run before improving in the long run. Hence, the impact on BOT in the short run will not be significant.
		[Other relevant limitations like small multiplier size are also accepted.]
	Evaluative Conclusion: - stand & justification	Overall, easy monetary policy is unlikely to have significant impact on the Japanese economy. Japan is in a liquidity trap as interest rates are near zero and even after years of easy monetary policy, Japan is still experiencing negative or slow growth from 2019 to 2022 as shown in Table 1. This shows that easy monetary policy has been ineffective in stimulating growth and hence the impact is likely to be insignificant.
(f) [Discuss the	extent to which green subsidies would help the US achieve
(i) E S	sustainable g	rowth. [10]
	Command word	Discuss – present 2 sides with an evaluative conclusion
	Concept	Green subsidies – expansionary fiscal policy Sustainable growth
	Context	US economy
	R1: Explain ho E1: Limitations R2: Explain ho E2: Limitations Evaluative co	by green subsidies helps the US achieve sustained growth s of green subsidies in achieving sustained growth by green subsidies helps the US achieve sustainable growth s of green subsidies in achieving sustainable growth onclusion: Take a stand and justify
	Requirement Introduction - Define sustainable growth	Suggested Answer Sustainable economic growth refers to a sustained rate of growth that can be achieved without causing other significant economic problems, such as depleted resources and environmental problems, high inflationary pressure or debt burden for future generations.
	R1: Explain how green subsidies help the US achiev sustained growth	According to Extract 6, green subsidies refer to the grants, loans and tax credits for the rollout of renewable energy and clean technologies across the US under the Inflation Reduction Act. Since the law passed, \$90bn of investment has been committed to clean energy projects in the country, ranging from solar panel factories to electric vehicle plants and battery hubs. Thus green subsidies has led to an increase in government expenditure (G) or investments (I) would lead to a direct increase in AD since G/I is a component of AD.
		The AD curve will shift rightwards from AD_0 to AD_1 as seen in Fig. 3 below. If there is spare capacity, the increase in G/I would trigger the multiplier effect, which will increase AD and real national income (RNY) by a multiplied amount Actual growth is achieved when RNY increases from Y_0 to Yf_0 .
		$\frac{GPL}{P_0} \xrightarrow{AS_0} \xrightarrow{AS_1} \xrightarrow{AS_1} \xrightarrow{P_0} \xrightarrow{P_0}$

9570/01/EYE/MI/24

	In the long run, these investments would translate to an increase in quantity of factors of production. This will increase the productive capacity of the economy. Long-run AS therefore increases, as shown by the rightward shift of the AS curve from AS_0 to AS_1 , thus achieving potential growth. As a result, sustained growth is achieved, with a further increase in RNY from Yf ₀ to Y ₂ , and only a slight increase in GPL to P ₂ instead of
	P ₁ .
<i>E1:</i> Limitations of green subsidies in achieving sustained growth	 However, the US green subsidies are seen as protectionistic by US trading partners, including Europe and Japan as firms are required to produce in the US and use only parts manufactured in the US. Protectionism may create a 'beggar-thy-neighbour" effect as the export revenue of its trading partners will fall, leading a fall in AD and hence real output of its trade partners. This would be particularly impactful considering the global economic slowdown. This fall in national income of trading partners may in turn lead to a fall in demand of the US exports (assuming that the exported goods are normal goods). This would lead to a fall in AD and hence a fall in real GDP and negative actual growth for the US.
	Or
	Trading partners like the EU could retaliate against protectionist measures by offering green subsidies as they do not want to lose out on new jobs and business investment. This may undo any positive effects from the initial increase in investment and the US may find it difficult to sustain its economic growth.
	Or
	However, green subsidies would put a strain on the government budget. There is an opportunity cost in terms of forgone spending on measures that promote other economic objectives such as equity. As such, the US government may not spend sufficiently on policies to promote sustainable growth and this could prevent maximum positive impact.
R2: Explain how green subsidies helps the US achieve	Beyond achieving sustained growth, investments in the clean energy can also lead to a cleaner environment and help to reduce the severity of climate crisis which have a negative impact on health, productivity and efficiency of economies of future generations.
sustainable growth	In addition, the massive investment in clean energy will lead to an increase in the supply of clean energy, resulting in cheaper cleaner energy. Since they are substitutes of fossil fuel or oil, the demand for oil is expected to fall, lowering the rate of depletion of natural resources. Thus sustainable growth is achieved.
<i>E2:</i> Limitations of green subsidies in achieving sustainable growth	There could be unintended consequences as the construction of these green energy facilities might result in substantial carbon emissions. Also, the new high-tech clean energy hardware will require not just massive amounts of base metals including copper, iron and nickel, but previously lesser-used rare elements such as lithium and cobalt. This could lead to more rapid depletion of such natural resources and growth is therefore unsustainable.

E	valuative onclusion	Overall, the extent to which green subsidies can help the US to achieve sustainable growth will depend on whether the government can maintain fiscal sustainability when competing for investments with other countries. It is also crucial for the government to encourage innovations to minimise the unintended consequences and ensure a relevant workforce to take up the new job opportunities in the green industry.