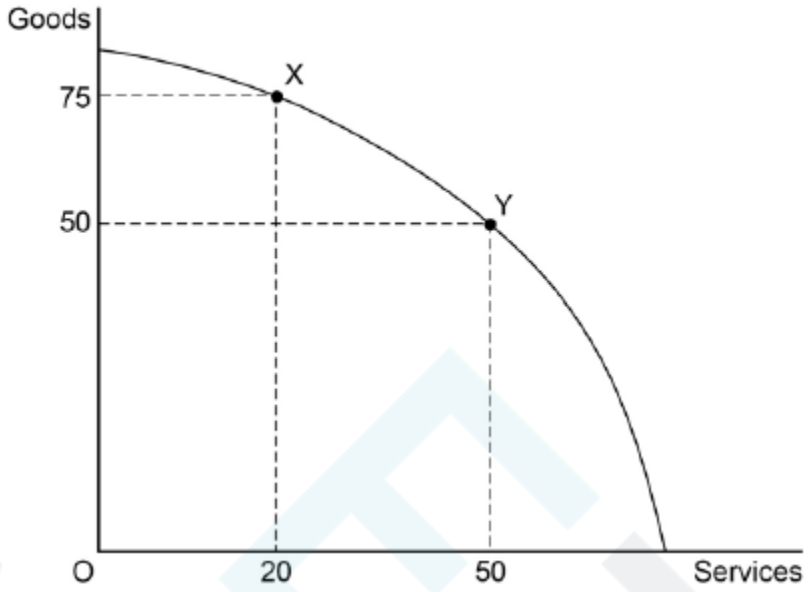
1. The diagram below is a production possibility curve showing the various combinations of goods and services that an economy can produce.

Which one of the following can be deduced from the diagram?



A Point Y is allocatively efficient but Point X allocatively inefficient ⬭

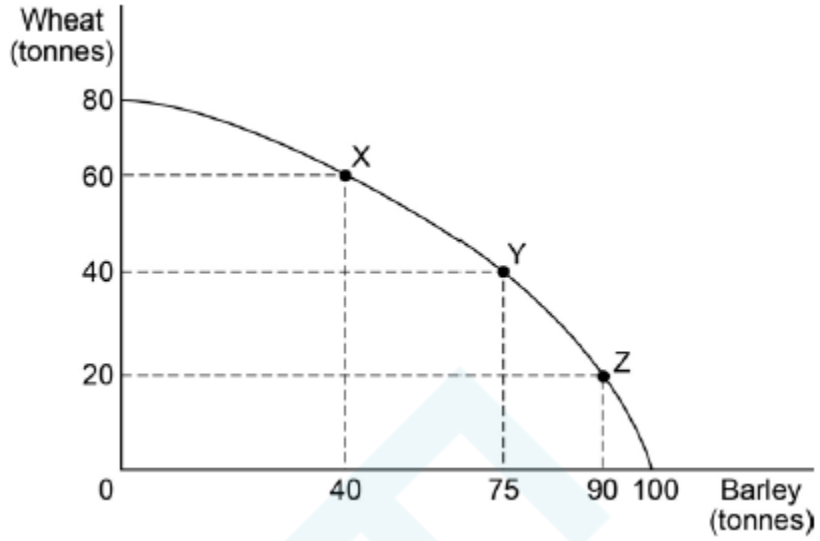
B Point Y is productively efficient but Point X productively inefficient ⬭

C The opportunity cost of producing more goods, in terms of services, is greater at Point Y than at Point X ⬭

D The opportunity cost of producing more goods, in terms of services, is lower at Point Y than at Point X ⬭

[1 mark]

2. A farmer can produce two types of grain on his farm, wheat and barley. The production possibility boundary below shows the different quantities of the two grains that can be produced on the farm in a single year.



It can be deduced from the diagram that

A a movement from X to Y results in an improvement in productive efficiency because the total output of grain increases from 100 to 115 tonnes. ⬭

B at point X, the opportunity cost of producing 20 more tonnes of wheat is 40 tonnes of barley. ⬭

C a movement from point Y to point Z does not involve an opportunity cost because all resources are fully employed. ⬭

D the maximum amount of grain that the farm can produce in one year is 80 tonnes of wheat and 100 tonnes of barley. ⬭

[1 mark]

3. The economist Greg Mankiw has written that 'society faces a trade-off between efficiency and equity. Efficiency means that society is getting the maximum benefits from its scarce resources. Equity means that those benefits are distributed fairly among society's members. Often, when government policies are designed, these two goals conflict.'

Explain how a production possibility diagram can be used to illustrate some features of the fundamental economic problem.

[15 marks]

4. Over the past 35 years, successive governments have reduced taxes on income whilst increasing taxes on spending, such as excise duties and Value Added Tax (VAT).

Distinguish between equity **and** equality and explain the effects of this government policy on the distribution of income.

[15 marks]

5. Explain what is meant by a 'finite' resource" (**Extract B**, line 4) and, with the help of a diagram, analyse why it might be argued that environmental policies are 'bad for business'.

[9 marks]

6. Economic decision making and policies are influenced by value judgements because

A all people are motivated by the desire to maximise their incomes. ⬭

B economic analysis and decision making is assumed to be based on complete information. ⬭

C they are based on the same methodology as the natural sciences. ⬭

D they involve moral and political considerations as well as positive analysis. ⬭

[1 mark]

7. Economics is a social science because

A all economic hypotheses are based on value judgements. ⬭

B economic policies can only be based on positive analysis. ⬭

C it involves the study of human behaviour and economic decision making ⬭

D quantitative data cannot be used to test economic theories. ⬭

[1 mark]

8. **The World Energy Market**

Extract A: What is OPEC?

OPEC is an organisation of 13 oil-producing countries. In 2015, OPEC accounted for an estimated 42% of global oil production and 73% of the world's 'proven' oil reserves, enabling OPEC to influence the price of oil. The current members of OPEC are: Algeria, Angola, Ecuador, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela.

OPEC is often cited as a classic example of a cartel, a group of independent producers who collude to increase their collective profits by limiting supply to raise prices. However, OPEC's power is reduced by the expansion of non-OPEC energy sources and by the temptation for individual OPEC countries to exceed production ceilings.

Extract B: The market for energy is changing

The energy industry is going through a period of profound change. Concerns about carbon emissions and global warming have led to policies that are shifting production away from coal towards natural gas and renewable energy. On the demand side, weaknesses in the global economy have meant that energy consumption has only grown slowly, but that will change if global economic growth picks up. The supply of energy has been affected by technological advances that have altered the range, availability and relative cost of producing different fuels. In the US, the shale revolution, allowing oil and gas to be extracted from shale by fracking, has opened up vast, new supplies of these fossil fuels. Other improvements in technology have stimulated growth in the output of renewable energy, particularly wind and solar power. The flip side of this is a fall in the demand for coal.

Changes in the supply and demand for different fuels have significant effects on relative prices. Price changes play a key role in promoting adjustments in energy markets which affect the pattern of consumption and investment in energy.

Extract C: Trends in the world market for energy

Figure 1 Energy consumption by fuel, million tonnes

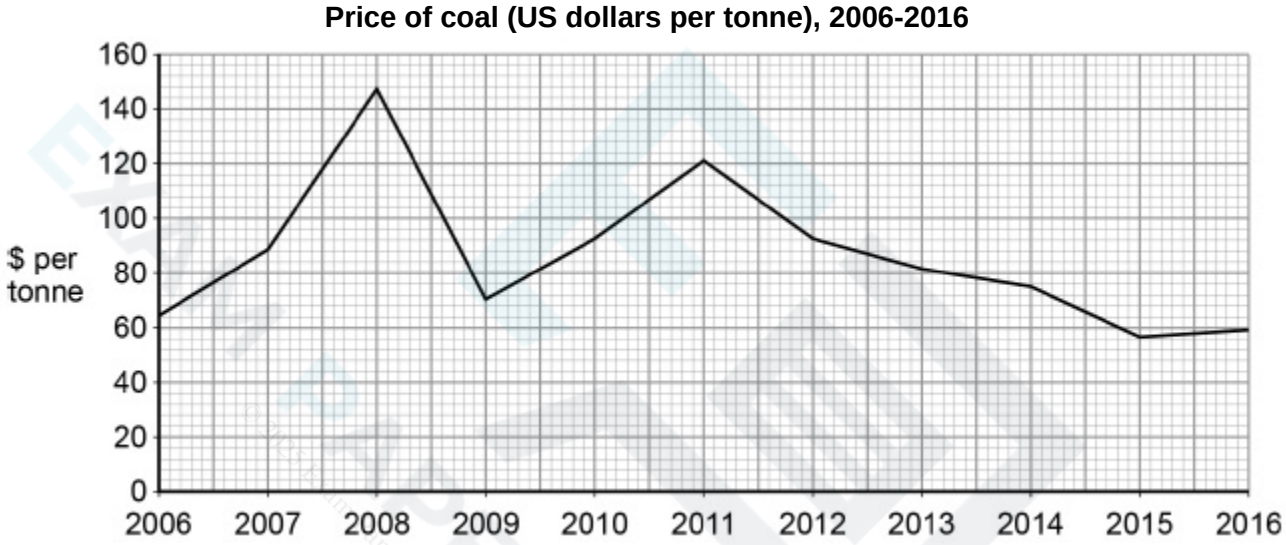
	2006	2009	2012	2015	2016
Oil	3 984	3 956	4 176	4 341	4 418
Natural gas	2 573	2 676	2 997	3 147	3 204
Coal	3 294	3 476	3 817	3 785	3 732
Nuclear energy	635	614	559	583	592
Hydroelectricity	688	737	832	883	910
Other renewables	93	144	239	367	420
Total	**11 267**	**11 603**	**12 620**	**13 106**	**13 276**

Note: Oil consumption is measured in million tonnes; other fuels in million tonnes of oil equivalent.
Oil, natural gas and coal are fossil fuels.
Other renewables include energy generated from the following renewable sources: wind, solar, geothermal, biomass and waste.

Figure 2 Average cost of producing oil (US dollars per barrel), March 2016

	Cost ($)
UK	44.33
Nigeria	28.99
Venezuela	27.62
US shale	23.35
US non-shale	20.99
Saudi Arabia	8.98

Figure 3 The price of coal



Extract D: Falling oil prices hit the oil-exporting countries hard

In 2014, despite the rapid fall in the price of oil, Saudi Arabia and the other OPEC countries did not cut production. Some believe that they wanted to make shale oil production in the US unprofitable to weaken a growing threat to OPEC's domination of the world oil market.

A fall in oil prices leads to a contraction of the oil sector in oil-exporting countries and also has other effects on their economies. For example, in the Middle East and North Africa, oil-based revenues often account for more than half of government revenue. A significant loss of government revenue may require a substantial reduction in public spending. A decline in oil prices reduces export revenues, leading to a deterioration in the current account of their balance of payments, usually causing a depreciation in their exchange rates. This is an important mechanism through which the economy can adjust, but it makes imports more expensive, adds to inflationary pressures and is likely to reduce living standards. It may also make it difficult to attract capital inflows and to finance both the balance of payments and budget deficits.

The Nigerian economy has been hit hard by low oil prices and falling oil production. The country went into recession in 2016, with real national income contracting by 1.5%. The annual inflation rate doubled to 18.6%, reflecting the weakness of the Nigerian currency. Even after cuts in capital spending, the budget deficit increased from 3.5% of GDP in 2015 to 4.7% of GDP in 2016.

Venezuela derives over 95% of its export earnings and almost half of government revenue from oil-related sectors. Falling oil prices aggravated Venezuela's economic crisis and it is estimated that the economy contracted by 10% in 2016 after a similar fall in real GDP in 2015. In 2016, its inflation rate was around 275%. Worsening shortages of food, medicines and other consumer goods are a symptom of the country's very fragile economy. Deteriorating public finances mean that Venezuela is a high-risk debtor, making it hard for the country to attract foreign capital. These difficulties are not all down to the fall in the price of oil. Nevertheless, a fall in the oil price makes it harder to deal with problems that are common to many less economically developed countries.

Extract E: Crisis? What crisis?

In December 2016, the members of OPEC and 11 non-OPEC countries, including Russia, agreed to cut production to 'stabilise' the oil market and raise prices. The initial agreement was for six months but has since been extended for a further nine months. So far, compliance with the production cuts has been very high at 90% and oil prices have stabilised.

The fall in the price of oil has driven some US fracking companies out of business but it has not been as damaging as predicted. Many companies have learnt how to extract more shale oil from each rig, reducing the cost per barrel. Increases in productivity reduce the break-even price of extracting oil from shale by fracking. If oil prices rise, output and investment in the industry are likely to increase again.

Recently, growth in the world economy has picked up. This will boost the demand for oil and put upward pressure on oil prices. In the long run, developments in technology that lower the cost of supplying renewable energy and producing electric cars, buses and lorries will reduce the demand for oil. A high price for oil should incentivise such developments.

INVESTIGATION

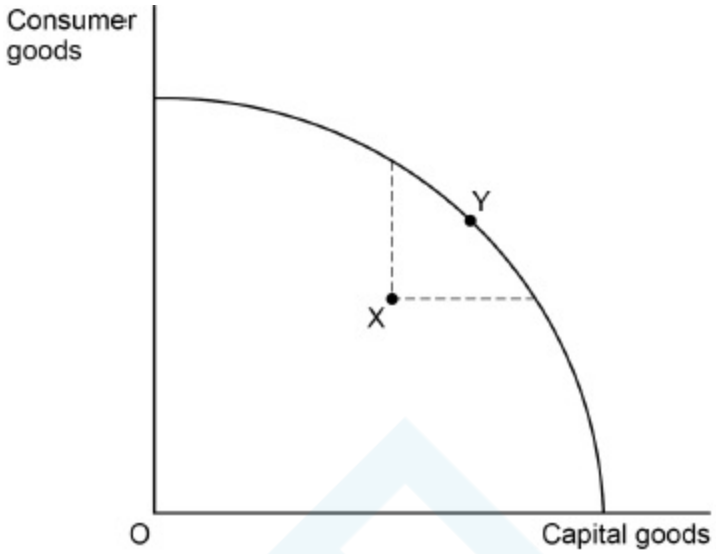
Scenario

You are an economist working for OPEC (The Organisation of Petroleum Exporting Countries). You have been asked to produce a review of the world energy market.
As part of this investigation, you are to provide answer to the following question.

After considering **Extract E**, and the original evidence in **Extracts A**, **B**, **C** and **D**, would you recommend to the members of OPEC that they continue to restrict the supply of oil to try to raise the world market price of oil? Justify your recommendation.

[25 marks]

9. The diagram below shows the production possibility frontier for an economy that produces consumer goods and capital goods. The economy is initially operating at point X within its frontier.



If the economy now moves from point X to point Y on its frontier it will

A achieve both productive and allocative efficiency. ○

B benefit from improved economies of scale in the production of both goods. ○

C increase its underlying trend rate of growth. ○

D obtain more consumer goods and capital goods at zero opportunity cost. ○

[1 mark]