

ECON 2002.01 Problem Set 1

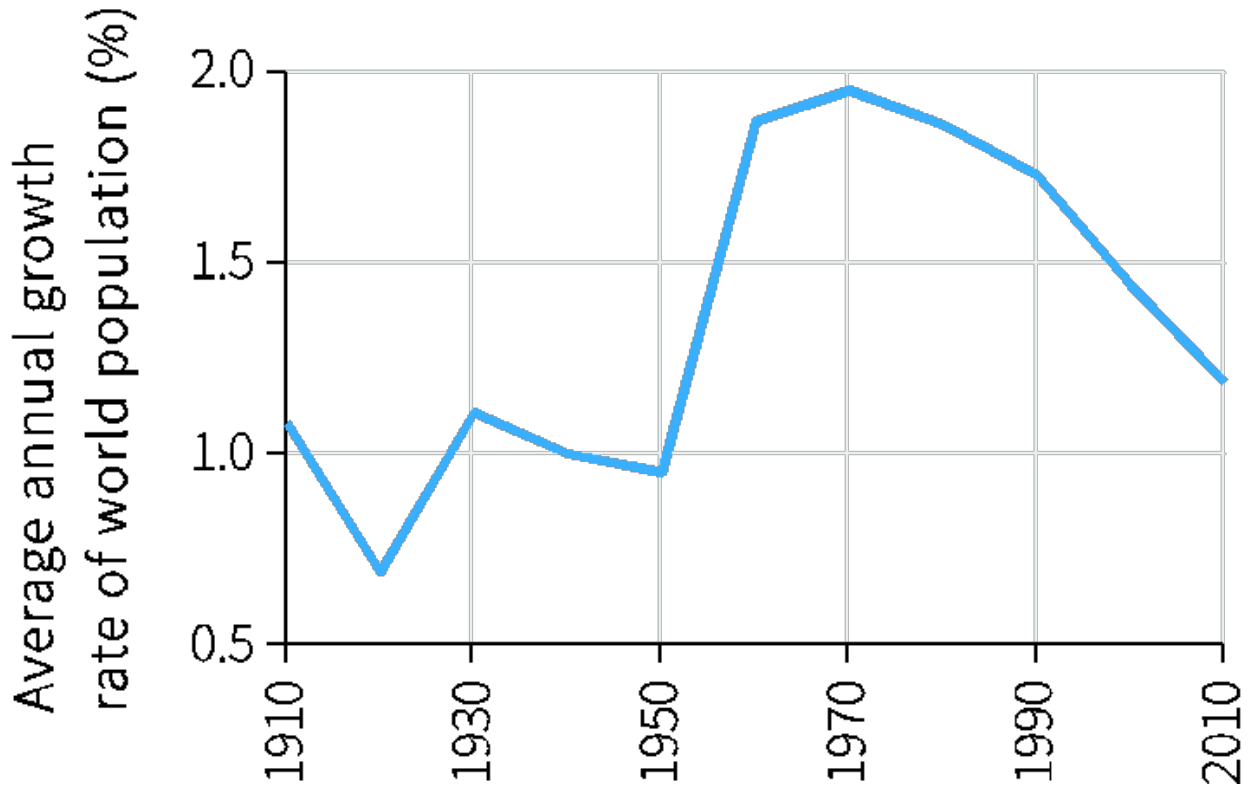
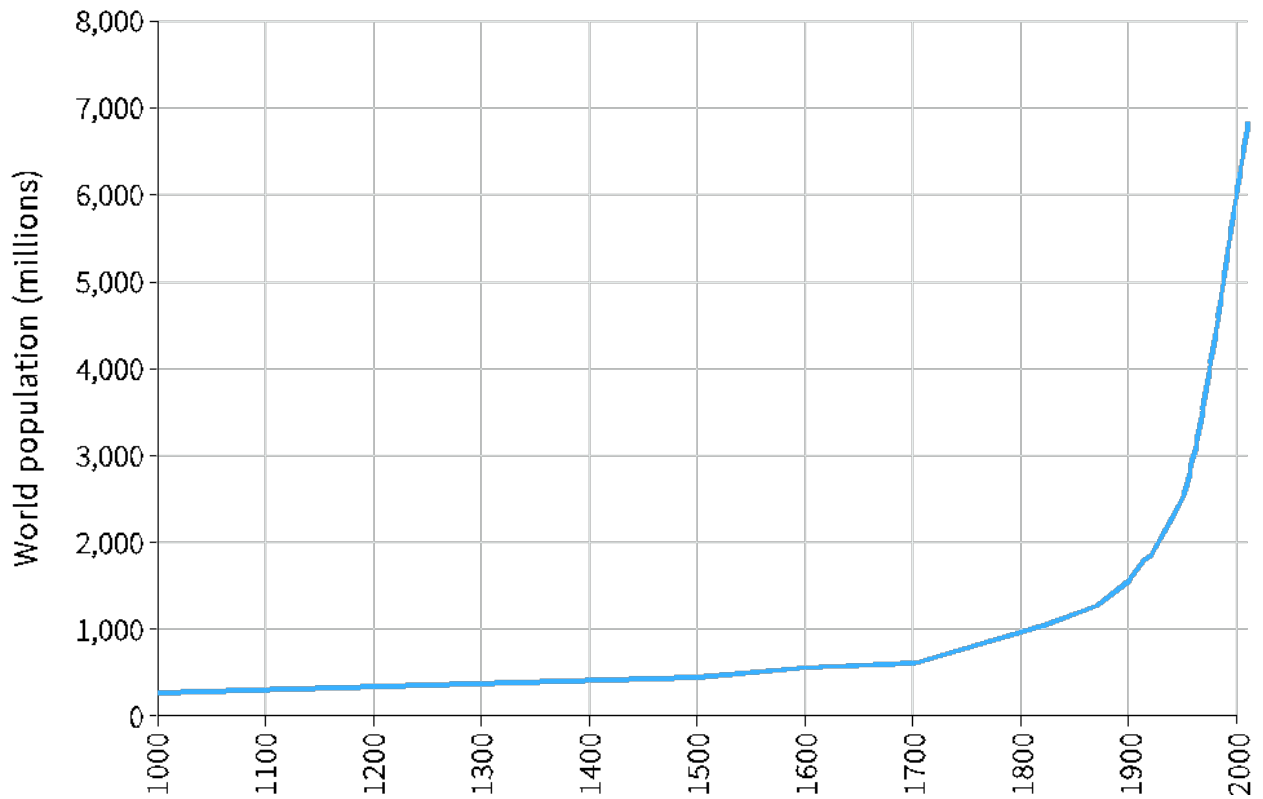
Unit 1 and Unit 2

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- ① The GDP in current US\$ for selected countries and the world are given below in \$ billions (source: World Bank). Based on this information, which of the following statements is correct?

Year	US	UK	Japan	Nigeria	World
2000	10,284.8	1,635.4	4,887.5	46.4	33,547.6
2015	18,036.6	2,858.0	4,383.1	481.1	74,152.5

- (A) The GDP of Japan grew by 10.3% over the 15 years.
- (B) Of the four countries, Nigeria was the only country that had a higher growth rate than that of the world over the 15 years.
- (C) The UK GDP growth rate was higher than that of the US.
- (D) The world GDP grew by over 10% per year on average.
- ② Which of the following statements is correct regarding disposable income?
- (A) Disposable income is the amount of income that is disposed (given away).
- (B) Disposable income is total income, calculated as the sum of an individual's wages, profit, rent, interest, and transfer payments from the government.
- (C) Disposable income is the maximum amount of expenditure (e.g. food, housing, clothing, and other goods and services) possible without having to borrow or sell possessions.
- (D) Disposable income is the exact measure of one's wellbeing.
- ③ The following graphs show the world population in millions from 1000 to 2010 and the world population growth rate in the 20th century. Based on this information, which of the following statements is correct?



(A) The world population did not grow much from 1000-1700, after which the growth rate increased sharply.

- (B) The world population continues to grow at an increasing rate.
- (C) The graphs suggest that the world population will start shrinking in near-term.
- (D) There has been a 600% increase in the world population over the past 200 years.

④ Which of the following does not lead to higher GDP?

- (A) Wealth transfers from the rich to the poor, which lead to higher income equality.
- (B) Higher government expenditure on education.
- (C) Rebuilding and reopening an abandoned shopping mall, which is immediately occupied by new businesses.
- (D) Building a new manufacturing factory, which requires the clearing of forests.

⑤ The following table shows the nominal GDP (in 2015 US dollars) and the population of Japan in 2013 and 2014 (source: The World Bank). Based on this information, which of the following statements regarding GDP per capita is correct?

YEAR	2013	2014
GDP	\$4,919,563,108,372.50	\$4,601,461,206,888.10
POPULATION	127,338,621	127,131,800

- (A) Japan's GDP per capita in 2013 was \$36,194.42.
- (B) Japan's GDP per capita fell by 6.74% between 2013 and 2014.
- (C) The fall in the population was enough to offset the fall in GDP, for an overall growth in GDP per capita between 2013 and 2014.

(D) Japan's GDP per capita fell by 6.31% between 2013 and 2014.

⑥ Which of the following statements is correct?

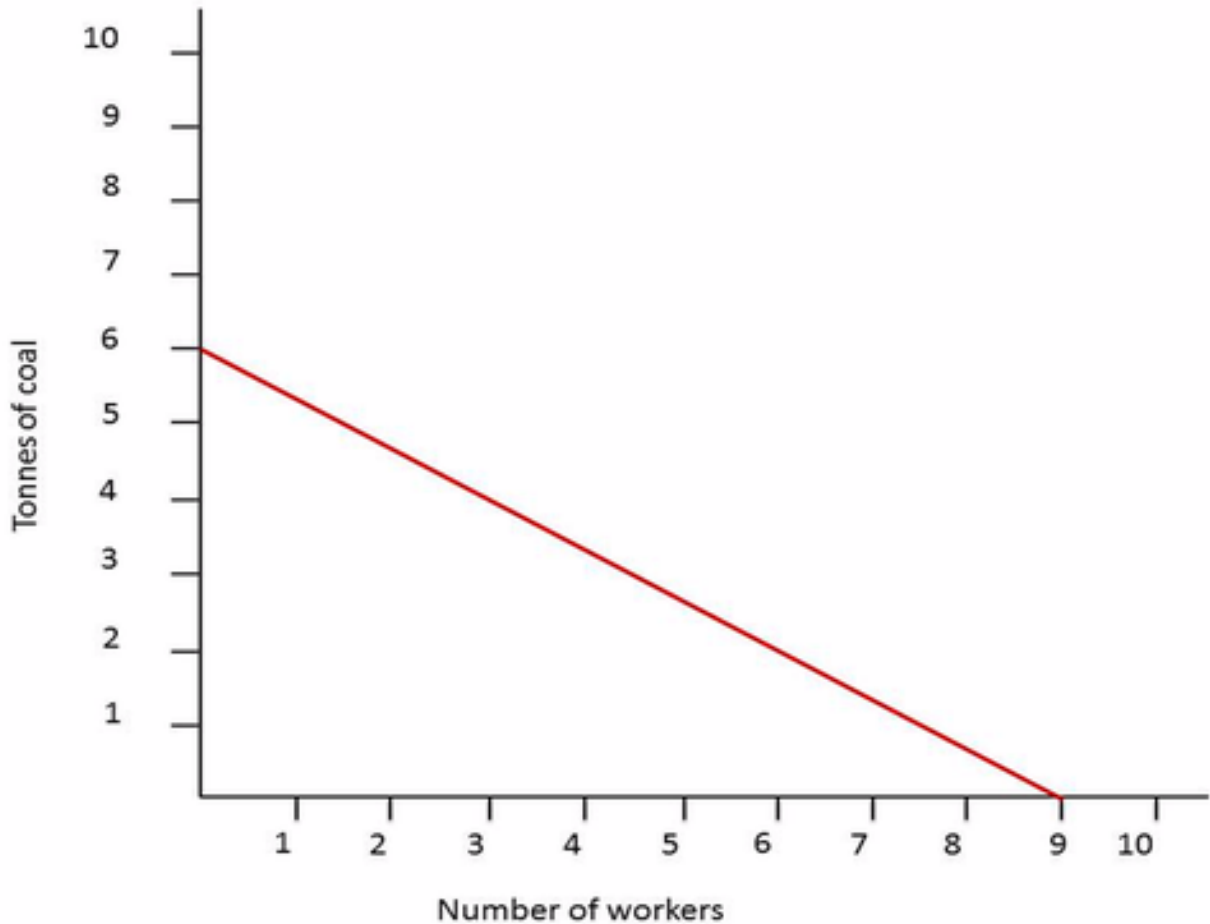
(A) A model is an exact representation of what goes on in the economy.

(B) A model is an economic relationship that is only represented by mathematics.

(C) Equilibrium is a self-perpetuating situation that does not change, unless a force for change is introduced from the outside and alters the basic data describing the situation.

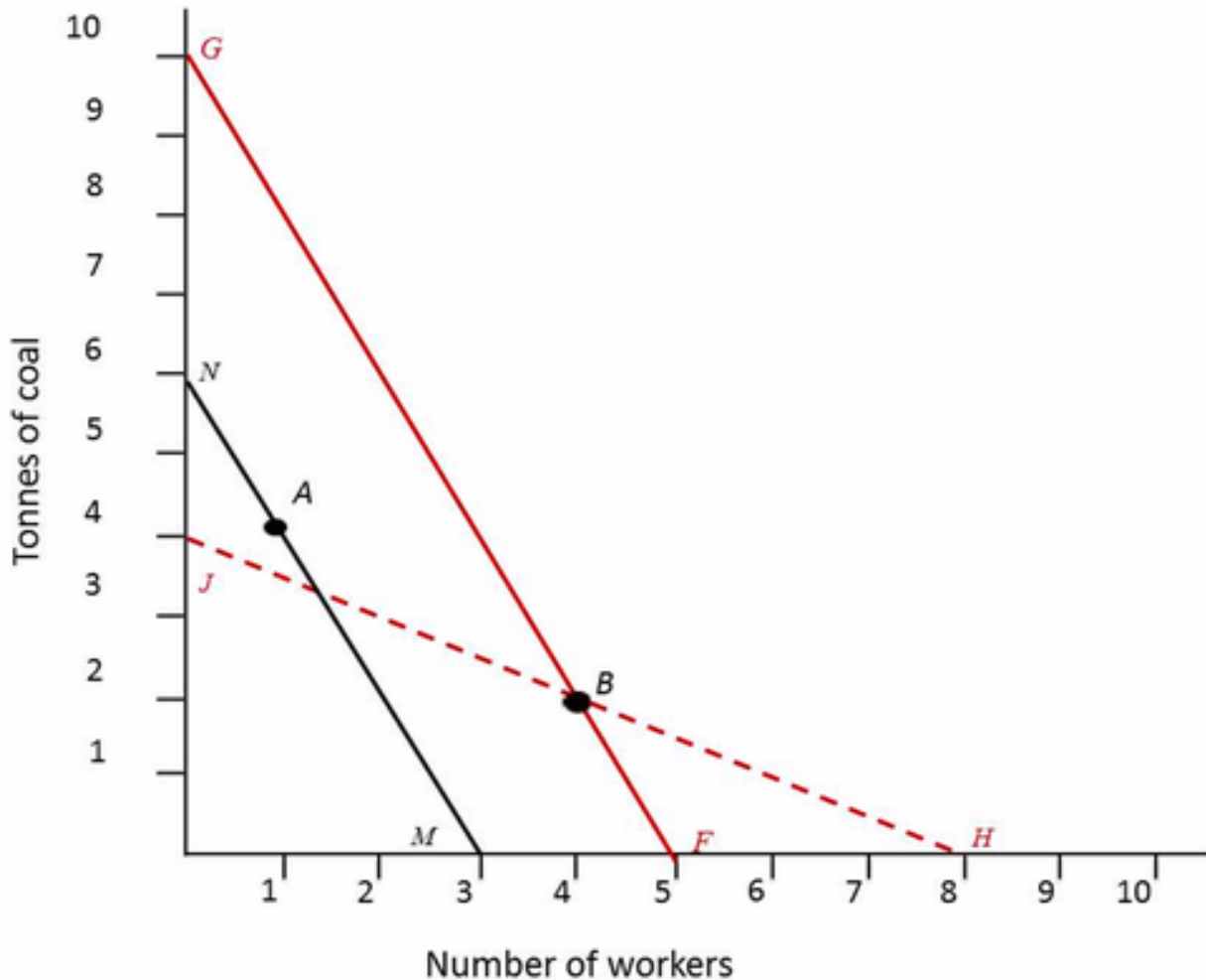
(D) Equilibrium in GDP growth rate is when the growth rate is zero.

⑦ Production of cloth requires two inputs: L workers and R tonnes of coal. The following diagram depicts the isocost associated with production. You are also given that the wage (w) is \$20 and the price (p) of coal is \$30. Which of the following statements is correct?



- (A) The isocost suggests that the cost of using 6 workers and 2 tonnes of coal is the same as that of using 3 workers and 4 tonnes of coal.
- (B) The slope of the isocost is $-1/3$.
- (C) The cost associated with the isocost is \$120.
- (D) All points above the isocost would cost more than \$210.

⑧ In the following diagram you are given two technologies, A and B, which can produce 100 metres of cloth. Technology A uses 1 worker and 4 tonnes of coal, while technology B uses 4 workers and 2 tonnes of coal. The diagram also depicts three examples of isocosts, NM, GF and JH. The wage cost and the price of coal are denoted by w and p , respectively. In case 1, the wage cost and the price of coal are $(w, p) = (20, 10)$, while in case 2, $(w, p) = (10, 20)$. Which of the following statements is correct?



- (A) Technology B would be chosen in both cases 1 and 2.
- (B) Technology A would be chosen in case 1 while technology B would be chosen in case 2.
- (C) Technology B would be chosen in case 1 while technology A would be chosen in case 2.
- (D) Technology B would be cheaper under case 1 than under case 2.

9 Which of the following statements regarding the Malthusian model are correct when there is a positive one-off technological shock (such as an improved seed)?

- (A) There is an immediate and permanent rise in the average product of labour.

- (B) The population initially rises but then falls to the pre-technological shock level.
- (C) Income initially rises but then falls to the subsistence level in equilibrium.
- (D) Malthus' Law states that an increase in productivity will result in both increased population and wages in the long run.

⑩ Which of the following is an economic rent?

- (A) The amount you pay your landlord for the use of an apartment.
- (B) The amount you pay to hire a car for a weekend.
- (C) The extra profit that a successful innovator makes on bringing a new product to the market before its competitors.
- (D) The extra profit that a firm makes when it doubles in size and there are no changes to costs or the price for each unit of its output.