

# INTERNATIONAL TRADE AND THE WORLD ECONOMY

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## Answers to \* exercises in chapter 3 of the Study Guide

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The \* exercises in chapter 3 are: 3.1 and 3.3.

### Question 3.1

3.1A

Producing a piece of garment in Japan costs  $\frac{1}{2}$  a unit of labour and in China 1 unit of labour. Japan has therefore an absolute cost advantage in the production of garments as it requires less labor to produce 1 unit than in China. Similarly, producing a game-computer in Japan costs 2 units of labour and in China 5 units of labour. Japan has therefore also an absolute costs advantage in the production of game-computers. In short, Japan has an absolute advantage in the production of garments *and* of game-computers.

3.1B.

In order to produce one game-computer extra, China has to give up the production of five pieces of garment. The price of a game-computer expressed in pieces of garment is therefore 5 in China. Similarly, the price of game-computers in Japan expressed in pieces of garment is 4 in Japan. Because the production of game-computers is relatively cheaper in Japan it has a comparative advantage in game-computers. Reversing this reasoning shows that China has a comparative advantage in the production of garment.

3.1C.

Producing one game-computer more in China costs 5 units of labour. This reduces the production of garments in China by 5 units. Producing one game-computer less in Japan frees up two units of labour. These can be used to produce 4 extra units of garments. Together China and Japan therefore produce one unit of garments *less*.

3.1D.

Reversing the logice of question 3.1C shows that Japan produces one game-computer more and 4 pieces of garments less while China produces five pieces of garments more and one game-computer less. Together China and Japan therefore produce one unit of garments *more*.

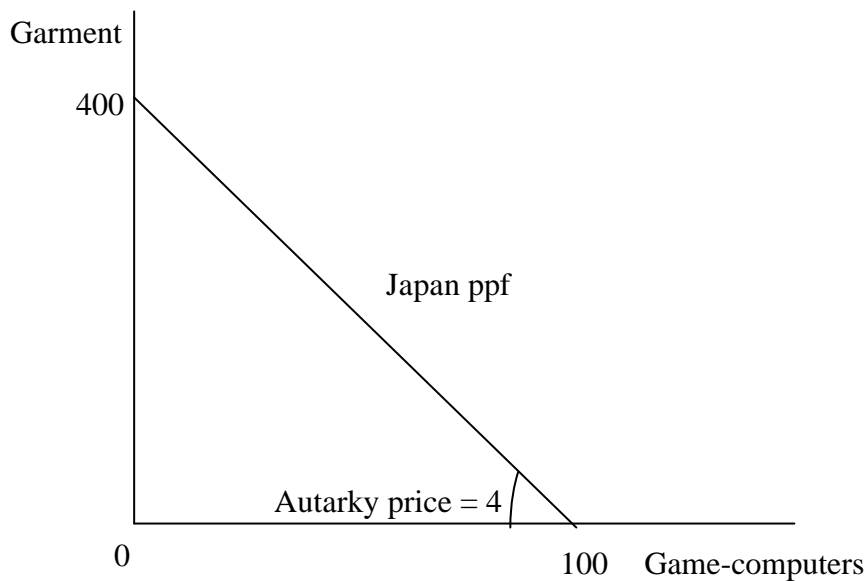
The arguments in 3.1C and 3.1D show that a country should specialise in the sector in which it has a comparative advantage. In 3.1C China specialised in game-computers and Japan in garments. With this specialisation patterns, at least one of the two countries is worse off because both countries together produce one piece of garments less. On the other hand, in 3.1D China specialised in garments and Japan in game-computers. With this specialisation pattern, both countries can be better off because both countries together produce one piece of garments more.

### **Question 3.3**

3.3A.

In the Ricardian model it is assumed that there are constant returns to scale and only one factor of production. Consequently, the production possibility curve is a straight line. We therefore only have to find two points of the production possibility frontier in order to draw the complete curve.

Assuming that the production of game-computers in Japan is zero, we can conclude that the maximum production of garments is 400 pieces ( $= \frac{200}{0.5}$ ). If the production of garments is zero, the maximum production of game-computers is 100 ( $= \frac{200}{2}$ ). These are two points on the production possibility frontier, shown below.



### 3.3B.

In autarky production is equal to consumption. The production possibility frontier shows the most efficient combinations of garments and game-computers that can be produced. The maximum consumption possibilities are therefore equal to the production possibility frontier.

### 3.3C.

If Japan can trade with the rest of the world at a price of 4.5 pieces of garments per game computer consumption need no longer be equal to production. The price of game-computers in Japan changes from the autarky price of 4 to the world trade price of 4.5 pieces of garments. The figure below shows the consumption possibilities of Japan for three different production points. It can be seen that Japan has the highest consumption possibilities if it completely specialises its production in game-computers. The line on the far right therefore represent the consumption possibilities of Japan if it is allowed to trade.



### 3.3D.

The gains from specialisation and trade can easily be seen in the figure above. The production possibility frontier represents the maximum consumption possibilities under autarky. If Japan specialises completely in the production of game computers and trades these for garments on the world markets, the maximum consumption possibilities are represented by the dotted line on the far right. This shows that in a situation with production specialisation and trade, Japan can consume more of both goods than in a situation of autarky (except if it *only* consumes game-computers)