

## 5. Terms of trade

Suppose that Denmark and Greece both produce oil and wine. Denmark's opportunity cost of producing a bottle of wine is 8 barrels of oil, while Greece's opportunity cost of producing a bottle of wine is 3 barrels of oil.

By comparing the opportunity costs of producing wine in the two countries, you can tell that Greece ✓ has a comparative advantage in the production of wine and Denmark ✓ has a comparative advantage in the production of oil.

Explanation:

Close ^

Greece has a lower opportunity cost in the production of wine than Denmark has. Therefore, Greece has a comparative advantage in the production of wine. That is, Greece has to give up only 3 barrels of oil to produce a bottle of wine, while Denmark must give up 8 barrels of oil to produce a bottle of wine. Another way to think of it is that it is cheaper for Greece to produce wine than it is for Denmark. Therefore, to achieve efficiency, Greece should specialize in the production of wine and Denmark should specialize in the production of oil.

You can determine the opportunity cost of oil in terms of wine from the opportunity cost of wine in terms of oil. That is, Greece's opportunity cost of producing a bottle of wine is 3 barrels of oil. Therefore, Greece can produce 3 barrels of oil if it forgoes the production of one bottle of wine. This means that Greece's opportunity cost of producing a barrel of oil is  $1/3$  of a bottle of wine. Similarly, Denmark's opportunity cost of producing a bottle of wine is 8 barrels of oil. Therefore, Denmark's opportunity cost of producing a barrel of oil is  $1/8$  of a bottle of wine. Since Denmark has a lower opportunity cost in the production of oil than Greece has, it has a comparative advantage in the production of oil.

Suppose that Greece and Denmark consider trading wine and oil with each other. Greece can gain from specialization and trade as long as it receives more than 3 barrels ✓ of oil for each bottle of wine it exports to Denmark. Similarly, Denmark can gain from trade as long as it receives more than  $1/8$  bottle ✓ of wine for each barrel of oil it exports to Greece.

Explanation:

Close ^

Greece's opportunity cost of producing a bottle of wine is 3 barrels of oil. Therefore, if it can import more than 3 barrels of oil for each bottle of wine it exports, it will be better off importing oil than producing it domestically.

Denmark's opportunity cost of producing a bottle of wine is 8 barrels of oil. Another way of thinking about this is that for each barrel of oil it produces, it must give up  $1/8$  of a bottle of wine. Therefore, if it can import more than  $1/8$  of a bottle of wine for each barrel of oil it exports, it will be better off importing wine than producing wine domestically.

Based on your answer to the last question, which of the following terms of trade (that is, price of wine in terms of oil) would allow both Denmark and Greece to gain from trade? Check all that apply.

- ✓  2 barrels of oil per bottle of wine
- ✓  4 barrels of oil per bottle of wine
- ✓  1 barrel of oil per bottle of wine
- ✓  7 barrels of oil per bottle of wine

Explanation:

Close ^

You found earlier that Greece will gain from trade if it gets more than 3 barrels of oil for each bottle of wine it exports.

Similarly, you found that Denmark will sell oil only if it gets more than 1/8 bottle of wine for each barrel of oil it exports. Another way of saying this is that Denmark is willing to pay up to 8 barrels of oil for each bottle of wine it imports.

Therefore, any price ratio that involves wine selling for between 3 and 8 barrels of oil per bottle of wine will benefit both countries. Among the terms of trade given, only a price ratio of 4 barrels of oil per bottle of wine and a price ratio of 7 barrels of oil per bottle of wine fall in this range.

Any price below 3 barrels of oil per bottle of wine would benefit Denmark but not Greece; similarly, any price above 8 barrels of oil per bottle of wine would benefit Greece but not Denmark. Accordingly, the given price ratios of 1 barrel of oil per bottle of wine and 2 barrels of oil per bottle of wine would *not* allow both Greece and Denmark to gain from trade.

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