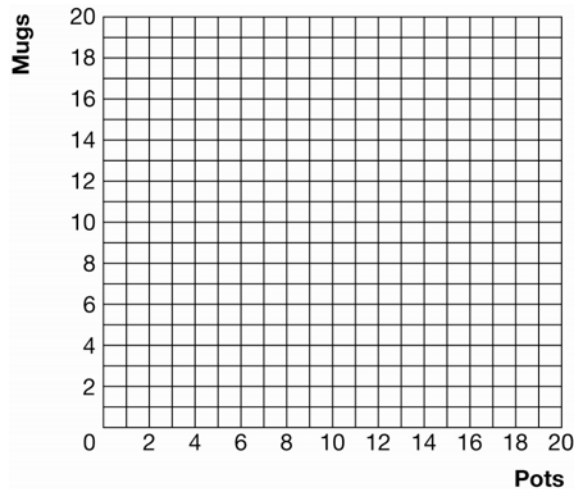# Chapter 3

1. Angela is a college student. She takes a full load of classes and has only 5 hours per week for her hobby. Angela is artistic and can make 2 clay pots per hour or 4 coffee mugs per hour.

a. Draw Angela's production possibilities frontier for pots and mugs.

Exhibit 2

b. What is Angela's opportunity cost of 1 pot? 10 pots?

c. What is Angela's opportunity cost of 1 mug? 10 mugs?

d. Why is her production possibilities frontier a straight line instead of bowedout like those presented in Chapter 2?

2. Suppose a worker in Germany can produce 15 computers or 5 tonnes of grain per month. Suppose a worker in Poland can produce 4 computers or 4 tonnes of grain per month. For simplicity, assume that each country has only one worker.

a. Fill out the following table:

	Computers	Grain
Germany	_____	_____
Poland	_____	_____

b.   Graph the production possibilities frontier for each country in Exhibit 3.

Exhibit 3
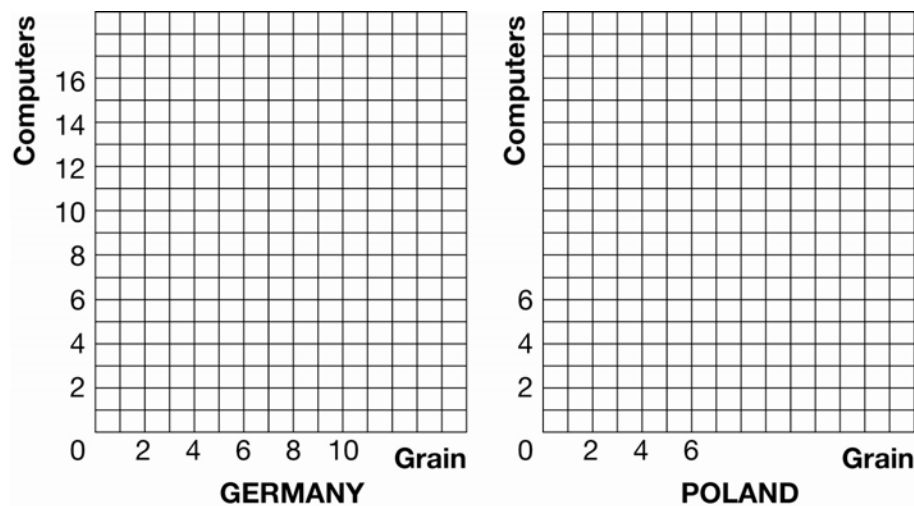
GERMANY   POLAND

c.   What is the opportunity cost of a computer in Germany? What is the opportunity cost of a tonne of grain in Germany?

d.   What is the opportunity cost of a computer in Poland? What is the opportunity cost of a ton of grain in Poland?

e.   Which country has the absolute advantage in producing computers? Grain?

f.   Which country has the comparative advantage in producing computers? Grain?

g.   Each country should tend toward specialization in the production of which good? Why?

h.   What is the range of prices for computers and grain for which both countries would benefit from trading with each other?

i.   Suppose Germany and Poland settle on a price of 2 computers for 1 tonne of grain or 1/2 tonne of grain for a computer. Suppose each country specializes in production and they trade 4 computers for 2 tonnes of grain. Plot the final consumption points on the graphs you made in part (b) above. Are these countries consuming inside or outside of their production possibilities frontier?

j.   Suppose the productivity of a worker in Poland doubles so that a worker can produce 8 computers or 8 tonnes of grain per month. Which country has the absolute advantage in producing computers? Grain?

k.   After the doubling of productivity in Poland, which country has a comparative advantage in producing computers? Grain? Has the comparative advantage changed? Has the material welfare of either country changed?

l.   How would your analysis change if you assumed, more realistically, that each country had 10 million workers?

3.   Suppose a worker in the United States can produce 4 cars or 20 computers per month while a worker in Russia can produce 1 car or 5 computers per month. Again, for simplicity, assume each country has only one worker.

a.   Fill out the following table:

	Cars	Computers
United States	_____	_____
Russia	_____	_____

b.   Which country has the absolute advantage in the production of cars? Computers?

c.   Which country has the comparative advantage in the production of cars? Computers?

d.   Are there any gains to be made from trade? Why?

e.   Does your answer in (d) above help you pinpoint a source for gains from trade?

f.   What might make two countries have different opportunity costs of production? (Use your imagination. This was not directly discussed in Chapter 3.)