EC3355 International Trade
Problem Set 3: Ricardo's model of comparative advantage

Consider two countries: the United Kingdom (UK) and China. Each country can produce two types of goods, textile (T) and food (F). Assume that the UK has 200 workers and China 600 workers. Labour productivity in each country, in terms of output per day, is:

Table 1: Labour productivity (units/day) by country and good

	UK	China
Textile	6	4
Food	18	3

1. Which country has the absolute advantage in producing textile and which in food?
2. What are the opportunity costs of producing food and textile in the UK and China?
3. Derive the production probability frontier for each country
4. Prior to trade the UK produces 600 T and 1,800 F while China produces 1,200 T and 900 F. Show that by altering the production in each country that it is possible to increase world output for each good.
5. What are the autarky relative prices and real wages in each country?
6. Opening up to trade, what will the trade pattern be and how does this affect real wages in each country?
7. Given the demand for food D_F and textile D_T, assume that people spend half of their income on each good. Under free trade, what are the world equilibrium relative prices and how do real wages change in each country as a result of free trade?

8. Suppose that a third country, South Africa, joins the free trade area and that labour productivity is given as 2 units of textile/day and 1/2 units food/day.
   How will the addition of South Africa affect which goods the UK and China export and which good will South Africa export? (analytical answer is enough here)

9. How does the joining of South Africa affect the relative price of textile? (analytical answer is enough here)

10. Does the welfare in the UK and China change because of South Africa joining and will South Africa benefit by joining the free trade area?