1. An economy can produce good 1 using labor and capital and good 2 using labor and land. The total supply of labor is 100 units. Given the supply of capital and land, the outputs of the two goods depend on labor inputs. The marginal product of labor curves corresponding to the production functions are as follows:

| Labor Input to Good 1 | MPS in Sector 1 | Labor Input to Good 2 |
| :---: | :---: | :---: |
| 10 | 1,51 | 90 |
| 20 | 1,14 | 80 |
| 30 | 0,94 | 70 |
| 40 | 0,87 | 60 |
| 50 | 50 | 0,40 |
| 60 | 0,79 | 40 |
| 0,43 |  |  |
| 70 | 0,74 | 30 |
| 0,47 |  |  |
| 80 | 0,69 | 20 |
| 0,50 |  |  |
| 90 | 0,66 | 10 |
| 0,54 |  |  |
| 100 | 0,63 | 00 |
| 0,61 |  |  |
|  | 0,60 |  |

A. Suppose that the price of good 2 relative to that of good 1 is 2 . Determine graphically the wage rate and the allocation of labor between the two sectors.

B. Suppose that the relative price of good 2 falls to 1 . Draw the changes in the graph.
C. Using the production possibility frontier graph below, illustrate the direction of change in production that occurs in the two sectors due to the variation in prices.

D. Calculate the effects of the price change on the income of the specific factors in sectors 1 and 2 .
2. Consider 2 countries: Finland and Brazil

Finland tends to have more Capital, while Brazil has more Land. Both countries have labor, which can work either in farms to produce coffee, or with capital to produce cellular phones. Suppose the relative demand of phones with respect to coffee is the same in both countries.

1. Draw the relative supply of each country:

2. Where does the relative supply of phones with respect to coffee lie after trade? (show in above graph by drawing the 'integrated' world relative supply curve)
3. What happens to the relative price of phones in Brazil after trade? in Finland?
4. Who gains and who loses from trade in Finland? Why?
5. Who gains and who loses from trade in Brazil? Why?
6. If the world price of a phone after trade is 60 EUR and that of a kilo of coffee is 10 EUR , how many kilos of coffee can Finland import for 180 units of phone?
