Econ 462 KE

25%.

8 pts.

a)

6 pts.

b) \( \frac{P_x}{P_Y} = \frac{1}{2} \quad \frac{P_{x*}}{P_{Y*}} = \frac{3}{4} \) Home has A, A in both, but C, A in Y.
Foreign has C, A in Y.
Home has the higher real wage.

6 pts.

c) \( R_L = 2 \quad R_P = \frac{1}{2} \)

6 pts.

d) Speculation makes the box bigger.

Trade allows movement to the contract curve inside the Pareto area, which can make one country better off without making the other worse off.
2. M.C. has differentiated products that ensure each firm faces a downward-sloping demand curve, but entry/exit until profits equal zero.

\[ PP: P = MC + \frac{1}{b_n} \] (profit maximizing price depends on competition)

\[ CC: P = AC = MC + \left( \frac{EC}{Q} \right)n \] (avg. cost depends on fixed costs, market size due to economies of scale.)

Free trade reduces \( P \) in both countries, and increases variety. Overall number of firms fall, each firm is larger, and there is increasing IT.

<table>
<thead>
<tr>
<th></th>
<th>Argentina</th>
<th>Brazil</th>
<th>Colombia</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>10</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12</td>
<td>22</td>
<td>84</td>
</tr>
<tr>
<td><strong>Trade Ratio</strong></td>
<td>24%</td>
<td>11%</td>
<td>77%</td>
</tr>
</tbody>
</table>

\[ T_{48} = 0.2 \cdot \frac{\sqrt{50 \cdot 200}}{2} = 10 \]
\[ T_{8c} = 0.2 \cdot \frac{\sqrt{200 \cdot 18}}{12} = 12 \]
\[ T_{6c} = 0.2 \cdot \frac{\sqrt{50 \cdot 18}}{9} = 2 \]

Brazil has the most trade, but it is the largest economy.
Columbia has the highest trade ratio, because it is close to a large economy.
(4) USA is capital-abundant because \( \frac{12}{150} > \frac{1}{600} \), has CiA, in M

USA has the highest \( \frac{P_T}{P_m} \) ratio in autarky.
K-O Theorem predicts USA will export M, import T.

(b) Free trade should equalize \( \frac{P_T}{P_m} \) ratios.
As \( \frac{P_T}{P_m} \) falls in USA, \( \frac{W}{R} \) falls. As it rises in China, \( \frac{W}{R} \) rises.

(c) If labor in the USA was five times as productive, this model still holds for effective factors, i.e. 40 hours from a Chinese worker is the same as 8 hours from a USA worker. The USA now has 750 labor-units compared to China's 600 (or 150:120). USA still has CiA in M, but not as extreme.
Under autarky, USA wage is more than five times as much, but under trade it will converge to five times as much.
6 pts. a) \[ \begin{align*}
\text{PPF shifts out (export-biased growth)} \\
\text{Production of } T \uparrow, M \uparrow \\
\text{Volume of Trade rises.} \\
\text{Overall welfare rises.}
\end{align*} \]

2 pts. b) Terms of trade \( \left( \frac{P_m}{P_T} \right) \) will fall, so \( \frac{W}{R} \) falls too.

c) Yes, because it is export-biased growth and terms-of-trade effect is negative.
This immiserizing growth also requires:
- Large terms-of-trade effect due to inelastic RS and RD.
- Large volume of trade.
- Growth not too large.

4 pts. d) USA has positive terms of trade effect \( \left( \frac{P_m}{P_T} \uparrow \right) \), \( \frac{W}{R} \downarrow \) and welfare \( \uparrow \).

5 pts. e) If China: \( K \uparrow \), this is input-biased growth.

- In (a), \( T, M \uparrow \) and volume of trade falls.
- In (b), terms of trade improve, \( \frac{W}{R} \uparrow \).
- In (c), it cannot be immiserizing.
- In (d), USA is worse off \( \left( \frac{P_m}{P_T} \downarrow \right) \), but \( \frac{W}{R} \uparrow \) (welfare \( \uparrow \)).
(6) All three of these imply that average costs are falling, each for different reasons. With internal economics, AC falls with firm size, giving an advantage to bigger firms. With external economies, the cost advantage is to countries with larger industries, i.e. more firms.

The learning curve leads AC to fall with cumulative experience, giving an advantage to firms and countries who are first to market. In both learning curve and external economies cases, a smaller latecomer may have higher prices in spite of a comparative advantage (e.g. country 2 in this graph).

If future profits are not appropriable or capital markets are inadequate, then the private sector will be unwilling or unable to take short-term losses necessary to capture the market in the long-term. Subsidies or protectionism in the short-run may help.

(7) Though there appears to be a statistical relationship between trade and income (or income growth), and there is theoretical reason to think that trade causes growth, there is also reason to think that both trade and growth come from other factors, like good policies and good geography. Wealthy countries have better infrastructure and higher value/weight ratios, while poor countries are more likely to rely on tariffs. The weight of statistical evidence is that trade does cause growth, but it is impossible to be certain that this is more than correlation.