1. **FALSE.** When the price of skill intensive goods rises relative to labor intensive goods ($P_s/P_l$ falls), we observe an increase in the returns to capital relative to labor, but sectors become less capital intensive. Also, the US exports capital-intensive goods and not skill intensive goods.

2. **TRUE.** Increase in the supply of skilled labor relative to unskilled labor implies the wage gap to decline. However, globalization may imply prices for unskill-intensive goods to fall.

3. **FALSE.** Paul Krugman argues that high productivity imply high-income levels. Moreover, in the Ricardian framework, trade is determined by differences in efficiency across countries.

4. There will be gains from trade if autarky price in the two countries are not equal. Autraky price in Britain is $60/1$, while in Japan in $20/(1/2)=40$.

Another way to do it is to find the wages of Japan relative to Britain (2.5-done in lecture). Japan is 3 times more efficient in producing TV’s and twice as efficient in producing whiskey. Since the relative wage is between the relative productivities then each country has a cost advantage in one good. Japan in TV’s and Britain in whiskey.

Production can be re-arranged so that there are gains from trade:

<table>
<thead>
<tr>
<th></th>
<th>TV’s</th>
<th>Whiskey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Britain</td>
<td>+60</td>
<td>-1</td>
</tr>
<tr>
<td>Japan</td>
<td>-40</td>
<td>+1</td>
</tr>
</tbody>
</table>

Therefore observing gains from trade.

You could also show the shifts in the consumption lines on the production possibility frontiers.

5. **TRUE.** Impact of trade on the mobile factor is ambiguous. Nominal wage changes due to trade imply real wage increase in terms of one of the goods and decrease in terms of the other.

6. **FALSE.** The factor specific to the export sector gains because the price of the export good increases and therefore worker move towards that sector.
7. **FALSE.** Under H-O, when countries trade, the relative prices of goods converge. This convergence in turn causes the factor prices to equalize.

8. **Terms of trade:** Price Exports/Price Imports. An increase in the terms of trade **improves** countries welfare. The slope of the straight lines (isovalue lines) is equal to minus the relative price of the exported good ($P_x$) respect to the imported good ($P_m$). An increase in the terms of trade ($P_x/P_m$ goes up) therefore clearly improves a country welfare (attains a higher indifference curve and therefore is able to increase consumption).
9. **TRUE.** With trade, a country will choose to consume at the point on the iso-value line that yields the highest possible welfare. This point is where the iso-value is tangent to the highest indifference curve; point D. Production is at point Q. At this point, the economy exports cloth and imports food.

10. **FALSE.** It is true that much of the reduction in global poverty is driven by falling poverty rates in India and China. However, not everyone agrees that the reduction in poverty rates in India is due to globalization. For example, on page 57 of the reader, D. Rodrik writes that “India managed to increase its growth rate, despite having one of the world’s most protection trade regimes.”
PART II

1. a)

\[
\frac{p_c^{UK}}{p_w^{UK}} = \frac{a_{kc}}{a_{kw}} = \frac{2}{6} = \frac{1}{3}
\]

\[
\frac{p_c^{US}}{p_w^{US}} = \frac{a_{kc}}{a_{kw}} = \frac{3}{2}
\]

b) The post trade price will be between the autarky relative prices in the US and the UK:

\[
\frac{1}{3} < \frac{P_c}{P_w} < \frac{3}{2}
\]

UK has a comparative advantage in cloth, so will export cloth and the US will export wheat.

c) The post-trade relative price of cloth to wheat is \( P^* = 2/3 \). We can use this information to get post-trade consumption of wheat and cloth in both countries given 1 unit of labor:

<table>
<thead>
<tr>
<th></th>
<th>Cloth</th>
<th>Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>1/3</td>
<td>1/2</td>
</tr>
<tr>
<td>US</td>
<td>1/2</td>
<td>1/6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Cloth</th>
<th>Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>1/2</td>
<td>1/3</td>
</tr>
<tr>
<td>US</td>
<td>3/4</td>
<td>1/2</td>
</tr>
</tbody>
</table>

Using that relative wages = relative consumption, wages in the US are 3/2 the wages in the UK.

d) Unit labor costs in the UK:

**Cloth:** \( a_{kc} x w_{UK} = 2^* w = 2w \)

**Wheat:** \( a_{kw} x w_{UK} = 6^* w = 6w \)

Unit labor costs in the US:

**Cloth:** \( a_{kc} x w_{US} = 3^* 3/2w = 9/2w \)

**Wheat:** \( a_{kw} x w_{US} = 2^* 3/2 w = 3w \)

So, unit labor costs for cloth is lower in the UK and this is consistent with the pattern of trade since UK exports cloth.
II. Heckscher-Ohlin

(a) Complete the diagram: (See above)

(b) Which industry is capital intensive?

Coffee mugs – As reflected in the diagram above, the MM curve lies to the left of the FF curve which indicates that for any given wage-rental ratio, the coffee mug industry will demand more capital relative to labor, which in turn implies that the coffee mug industry is capital intensive.

(c) Now suppose that India opens free trade with SE Asia. Explain how trade will affect the production techniques used in India. Make reference to your diagram showing how the old equilibrium is changed.

India will export flannel (it is labor-abundant, compared with its potential trade partners in South East Asia) – This will cause the price of flannel relative to mugs ($P_f/P_m$) to increase, in turn, increasing the return to labor relative to capital ($w/r$). Production techniques will shift such that firms in both industries employ more capital relative to labor ($K/L$) due to the increase in the price of labor ($w$) relative to capital ($r$).

(d) Will trade cause ($w/r$) to rise or fall?

As stated above, the wage – rental ratio will increase because labor is the factor used intensively in the production of flannel (which India will export once they open to trade according to the HO model) whose price relative to coffee mugs will increase in India as a result.

III. Graph

(a) [3 points] What happened to the composition of exports across high, medium, and low wage employment as these countries opened up to trade?
As the countries opened up to trade (in the mid 1980’s), composition of exports shifted to more low and medium wage and less high wage.

(b) [2 points] If exports are representative of labor demand in the country, then what is likely to have happened to inequality?

Inequality likely decreased – if demand for high skilled labor fell, and demand for less-skilled labor rose, then one would expect to see a fall in inequality as the return to low and medium skilled labor would rise relative to that of high skilled labor – thereby squeezing the income gap.

(c) [2 points] Which trade framework could explain what happened in Latin America after it opened up to trade?

Heckscher-Olin/Stolper Samuelson framework - because Latin America is abundant in low skilled labor relative to their likely trading partners (US/EU/Canada) and, upon opening up to international trade, would begin to export goods that use intensively the abundant factor, i.e. low wage composition goods (as reflected in the graph). SS theorem states: An increase in the price of a good will cause an increase in the price of the factor used intensively in that industry and a decrease in the price of the other factor.

(d) [3 points] In fact, inequality in all these countries rose. In light of your answer to (b), is trade or skill-biased technical change a more likely explanation for the increase in inequality in Latin America?

Skill biased technical change – this would explain how despite the increase in demand for low wage (skilled) labor after opening up to trade, the demand for high skilled laborers increased to the extent that their wage increase outweighed the increase in demand for low skilled labor, thereby increasing inequality in Latin America. In the most recent issue of the New York Times Magazine, Paul Krugman articulates this phenomenon well:

“skill-biased technological change”…situates the cause of growing inequality not in foreign trade but in domestic innovation. The torrid pace of progress in information technology…had increased the demand for the highly skilled and educated. And so the income distribution increasingly favored brains rather than brawn. (p. 65)