1 Two sector model.

I. For each of the following:

(a) draw the Harrod-Johnson diagram

and

(b) calculate the incomplete specialization output price ratios, $\bar{p}$ and $p$ and indicate what happens to these as $k$ (the overall capital intensity) is varied.

(1)
\[
Y_1 = 3K_1^{3/5}L_1^{2/5} \\
Y_2 = 10K_2^{1/2}L_2^{1/2} \\
K = 100, L = 15
\]

(2)
\[
Y_1 = 7K_1^6L_1^4 \\
Y_2 = 10K_2^6L_2^4 \\
K = 30, L = 3
\]

(3)
\[
Y_1 = K_1^{1/2}L_1^{1/2} \\
Y_2 = K_2^{3/5}L_2^{2/5} \\
K = 12, L = 13
\]

(4)
\[
Y_1 = K_1^{3/4}L_1^{1/4} \\
Y_2 = K_2^{3/4}L_2^{1/4} \\
K = 1, L = 1
\]

II. Describe the role of capital intensities in the 2-sector model. When is $p < \bar{p}$? When is $p = \bar{p}$?

III. If two countries have the same output price ratio, do they have the same factor price ratio?