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)
$$Y_1 = 4K_1^{3/4}L_1^{1/4}$$
$$Y_2 = 10K_2^{1/2}L_2^{1/2}$$
$$K = 100, \ L = 20$$

(2)
$$Y_1 = 5K_1^5L_1^5$$
$$Y_2 = 10K_2^5L_2^5$$
$$K = 30, \ L = 3$$

(3)
$$Y_1 = K_1^{1/2}L_1^{1/2}$$
$$Y_2 = K_2^{3/4}L_2^{1/4}$$
$$K = 12, \ L = 12$$

(4)
$$Y_1 = K_1^{3/4}L_1^{1/4}$$
$$Y_2 = K_2^{3/4}L_2^{1/4}$$
$$K = 15, \ L = 15$$

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?