PS4: <https://edisciplinas.usp.br/pluginfile.php/4460730/mod_folder/intro/NI_11th%20Edtion%20%281%29.pdf>

* 1. Derive the aggregate demand functions for and ; denote them as, respectively, and . **20 points**

4.31 on page 127 of the textbook:

4.32 on page 127 of the textbook:

4.33 on page 127 of the textbook:

* 1. Write the equations describing the equilibrium conditions, using and to represent the aggregate endowments. **10 points**

<https://edisciplinas.usp.br/pluginfile.php/4460730/mod_folder/intro/NI_11th%20Edtion%20%281%29.pdf> : An endowment economy is a fancy term for an economy in which there is no endogenous production – the amount of income/output is exogenously given.

13.27 in textbook page 473: In words, Walras’ law states that the value of all quantities demanded must equal the value of all endowments (supply = demand).

* 1. Solve for the equilibrium price ratio. **20 points**

Slope of the budget constraint is the equilibrium price ratio. Marginal Rate of Substitution.

and at **utility maximizing point** is where the MRS = price ratios = slope of the budget constraint.

<https://www.google.com/search?q=slope+of+the+budget+constraint+is+the+equilibrium+price+ratio&rlz=1C1CHBF_enUS840US840&oq=slope+of+the+budget+constraint+is+the+equilibrium+price+ratio&aqs=chrome..69i57.8608j0j7&sourceid=chrome&ie=UTF-8>

<http://www.sfu.ca/~wainwrig/mpp/mrs-notes.pdf>

<https://www.cengage.com/resource_uploads/static_resources/032423662X/8279/AX_B-Arnold_431-438.pdf>

1. A firm producing hockey sticks has a production function given by  In the short-run, the quantity of capital that the firm has is fixed at . The rental rate for is and the wage rate for is
   1. Calculate the firm’s short-run *total* cost function and *average* cost function. **5 points**

Profit=p\*q- (mcl\*l+mck\*k)

Profit=rev-cost

Revenue=p\*q

Cost=mcl\*l+mck\*k

MCL=w=4

MCK=v=1

C=4\*L+1\*100

AC=TC/Q

* 1. Calculate the firm’s short-run *marginal* cost function. **2 points**

Take the derivative of the total cost function: 4

SRMC = 4

* 1. Plot the short-run average and marginal cost functions for the following values of **7 points**

|  |  |  |
| --- | --- | --- |
| Quantity | SRAC | SRMC |
| 25 | 4.25 | 4 |
| 50 | 2.5 | 4 |
| 100 | 2 | 4 |
| 200 | 2.5 | 4 |