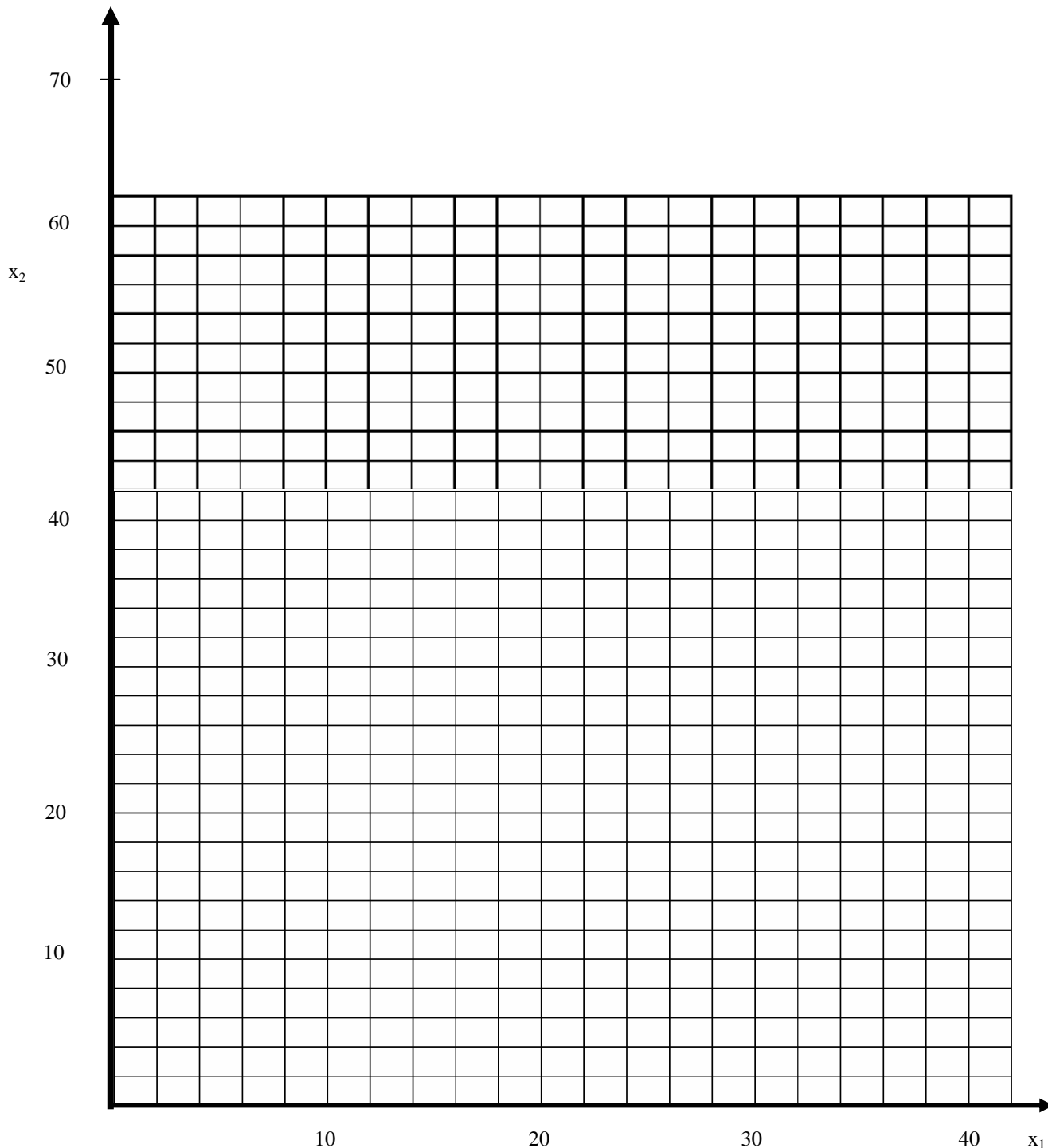


More exercises – July 17, 07

1 a) Francesco has Cobb-Douglas preferences of $u(x_1, x_2) = 7x_1^5x_2^6$. By using the Lagrange method, find his individual demands for the two goods.

b) Find his initial consumption bundle for the two goods, assuming $m=55$, $p_1 = 5$ and $p_2 = 1$. Draw his original budget line and his bundle into the graph below. Mark the bundle with an "A" and the budget line using the budget equation with the values for m and the prices.



c) Assume that the price for good 1 decreases to $p_1' = 2.5$. Find his income compensation in A and compute the new compensated equilibrium, and mark it with a "B." Draw the new budget line into the above diagram and label it with the right expression using new prices and new income. Mathematically find his substitution effect and mark it in the diagram above as well.

d) Find his final consumption bundle at new prices and mark it with a "C." Draw the final budget line into the above diagram and label it with the right expression using the right values for income and prices. Mathematically find his income effect and mark it in the diagram above as well.

(2) A consumer has preferences following the utility function $u(x_1, x_2) = x_1^7 x_2^4$.

a) Derive the marginal utilities of the consumer and the MRS.

b) Transform this utility function into any function $v = \ln u$. Algebraically show that the MUs now change but that the MRS is the same as in part a).