**Quiz Questions**

1. Suppose that

where for all Show that

by following these steps. First (i) write

and then (ii) take the derivative of both sides with respect to and then (iii) impose on both sides and finally (iv) take the anti-logarithm of both sides.

Remark: This is not a part of your homework but note that tour answer will show that the CES technology converges to the classic Cobb-Douglas case at . The linear technology at is trivial (check it!). What about Leontief technology at ?

1. Show that

exhibits constant returns to scale. What condition would you need to impose on

to preserve the constant returns to scale property?

1. Assume that the production technology is Cobb-Douglas:

Solve the standard profit maximization problem

where is the price of the input to show that income share of each input is