

EC 701 Advanced Micro Economics, HW 2 Supply

The following homework assignment is to be submitted via email to Dorothy Kemboi at dck00004@mix.wvu.edu with a “cc” to me at roger.congleton@mail.wvu.edu. The answers are due before class time at the time we begin the next block of material. They should be typed up and emailed to Dorothy in Word. (This will take a bit of time, but is good practice.) Dorothy will grade them and return them within a couple of days.

- (1) Suppose that Acme is a profit maximizing firm that sells its output in a perfectly competitive market and has the cost function $C=5Q^{1.5}$. Find Acme’s profit maximizing output when the price at which its output can be sold is 100.
- (2) Suppose that Acme is a profit maximizing firm that sells its output in a perfectly competitive market and has the cost function $C=a+cQ^{1.5}$. Find Acme’s supply function.
- (3) Use your results from problem 2 to characterize the slope of Acme’s supply function.
- (4) Suppose that Acme is a profit maximizing firm that sells its output in a perfectly competitive market and has the cost function $C= c(Q, w, r, T)$. Characterize Acme’s supply function.
- (5) Use the results from problem 4 to characterize the slope of Acme’s supply curve and the effect of an increase in interest rates on its supply curve.
- (6) Suppose that Apex produces and sells a product for which there are “good” but not perfect substitutes. The demand curve for its products is $Q = a - bP$ and its cost function is $C = cQ^{1.5}$. Characterize Apex’s supply and pricing functions. (Hint: you may want to use the implicit function theorem)
- (7) Suppose that Apex produces and sells a product for which there are “good” but not perfect substitutes. The demand curve for its products is $Q = a - bP + cY$ and its cost function is $C = c(Q, w, r, T)$. Assume that Apex’s profit function is strictly concave. Characterize Apex’s supply and pricing functions.
- (8) Use the results from problem 7 to characterize the slope of Apex’s supply function. What assumptions have you made about Apex’s cost function to reach that conclusion?