EC 701 Advanced Micro Economics, HW 2 Supply

The following homework assignment is to be submitted via email to Isaiah Boyer at icb00014@mix.wvu.edu with a "cc" to me at roger.congleton@mail.wvu.edu. The answers are due **1 hour before class time on the day that we begin the next block of material** in the course. They should be typed up and emailed to Isaiah in Word. (This will take a bit of time, but it is good practice.) Isaiah will grade them and I will return them in class shortly after he finishes grading them.

(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.

(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?