Name _____   ID Number _____

Name _____   ID Number _____

1. A firm produces two goods. The total cost of producing x units of good 1 and y units of good 2 is

$$C(x,y) = x^2 + xy + y^2 + x + y + 14.$$

Suppose that the firm sells all its output of each good at prices per unit of p and q, respectively.

(a) (0.5 point) Write down an expression for the total revenues of the firm in terms of x and y.

(b) (0.5 point) Write down an expression for the total costs of the firm in terms of x and y.

(c) (0.5 point) Write down an expression for the total profits $\pi(x,y)$ of the firm in terms of x and y.

(d) (1.5 point) Find stationary points of the profit function.

(e) (2 points) Do any of these stationary profits maximize profits? Show why or why not.