1. **Cost minimization problem**

Consider a firm that uses two inputs, the quantity used of input 1 is denoted as and the quantity used of input 2 is denoted by . The firm produces and sells one good, using the production function: . The prices of each inputs are and , respectively. The market for the product is competitive and output price is.

1. Does the production function exhibit constant, increasing or decreasing returns to scale? Why?

NOTE I DON’T NEED HELP WITH A ☺ After doing my calculations, I concluded that the production function exhibits constant returns to scale.

1. Based on your answer to part (a), does the firm has a long run profit maximizing plan?
2. What is the cheapest way to produce 36 units of output? How much is the cost in this case?
3. What is the firms profit if it manages to sell all 36 units product at the market price?