



# Microeconomics Unit 5

## Free Response Questions

**FRQ #1-** The table shows the production function for a waffle restaurant called The Noble Steed. The restaurant hires workers in a perfectly competitive labor market with an equilibrium wage of \$25. Assume that the restaurant can sell waffles for \$10 each and that their fixed cost is \$50.

Number of Workers	Total Waffles
0	0
1	10
2	25
3	35
4	40
5	43
6	45
7	40

- Calculate the marginal revenue product of the 3rd worker. Show your work.
- How many workers should the restaurant hire to maximize profit? Explain.
- Calculate the total cost of labor for the restaurant. Show your work.
- If the price of waffles increased and the wage stayed the same, would the number of workers hired by the restaurant increase, decrease, or stay the same? Explain.
- Assume instead that the market wage increased to \$35.
  - Identify the number of workers that the restaurant will hire to maximize profit.
  - If the cost of labor is the only variable cost, calculate the total profit earned by the firm when it hires the profit maximizing quantity of workers. Show your work.

**FRQ #2-** Antonio is an avocado farmer that hires unskilled labor in a perfectly competitive factor market.

- Draw correctly labeled side-by-side graphs for the labor market and Antonio's firm. On your graphs show each of the following.
  - The equilibrium wage and quantity in the market, labeled WE and QE.
  - The quantity of workers hired by Antonio's firm, labeled QF.
- If Antonio hires a quantity of workers that is less than QF, will the marginal factor cost of the last worker hired increase, decrease, or stay the same? Explain.
- Assume instead that Antonio is the first company to develop a new technique that increases the productivity of his workers. Will the number of workers that Antonio hires increase, decrease, or stay the same? Explain.
- Now assume that the government places a legally binding minimum wage on unskilled workers. Draw a new graph for the labor market and show each of the following.
  - The minimum wage labeled, W1.
  - The quantity of unskilled labor hired in the labor market as a result of the minimum wage, labeled Q1.