

Directions: Use  $C(x) = 34000 + 4500x + 5x^{\frac{3}{2}}$  as a cost function with  $x$  representing a single unit to answer the following questions

1. Determine the cost of producing 2000 units
  
  
  
  
  
  
  
  
  
  
2. Determine the average cost of producing 2000 units
  
  
  
  
  
  
  
  
  
  
3. Determine the marginal cost of producing 2000 units
  
  
  
  
  
  
  
  
  
  
4. What production level will minimize average production cost?

Directions: You are given a revenue function  $R(x) = 240\sqrt{x}$  and  $C(x) = 9x^2 + 12x$  with  $x$  representing 500 units

5. State each of the following:
  - a. Marginal cost function
  
  
  
  
  
  
  
  
  
  
  - b. Average cost function
  
  
  
  
  
  
  
  
  
  
  - c. Marginal revenue function
  
  
  
  
  
  
  
  
  
  
  - d. Marginal profit function



Directions: You are given a revenue function  $R(x) = 240\sqrt{x}$  and  $C(x) = 9x^2 + 12x$  with  $x$  representing 500 units

7. Sketch a graph with  $R(x)$  and  $C(x)$  on the same axes

8. Label any points of intersection of these functions and any intercepts of the graph

9. What does it mean when  $R(x) > C(x)$ ? Hint Profit?

10. What does it mean when  $R(x) < C(x)$  Hint Profit?