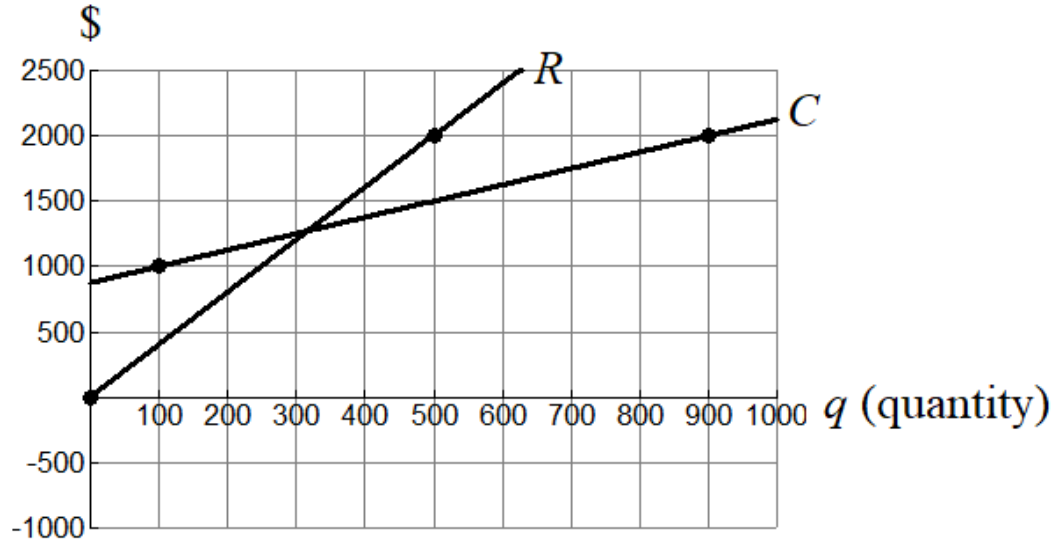**Revenue and Cost Functions**

The graph below shows the revenue $R(q)$ and cost $C(q)$ functions for q units produced and sold.

1. Use the graph to estimate each:
   (a) What is the profit generated by producing 500 items? $\$$_____

   (b) How many items must the company produce to break even? about _____ items

2. Find and interpret the slope of R. Then give its formula.
   (a) slope:

   units:

   interpretation: _____

   (b) $R(q) =$ _____

3. Find and interpret the slope of C. Then give its formula.
   (a) slope:

   units:

   interpretation: _____

   (b) $C(q) =$ _____

4. Find and interpret the slope of the profit function P. Then give its formula. Hint: $P = R - C$.
   (a) slope:

   units:

   interpretation: _____

   (b) $P(q) =$ _____

5. Write and solve an equation to find the break-even quantity.