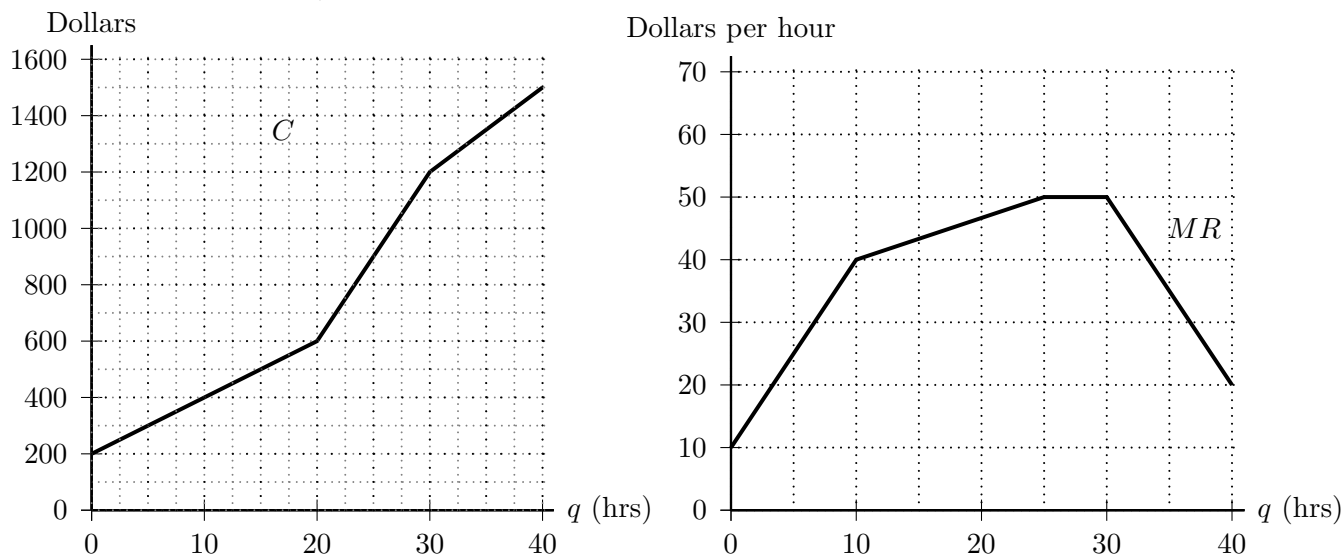


9. [10 points] Months later, the now infamous Roderick has been dethroned. Before Erin returns to the University of Michigan, she visits Roderick to hear his side of the story. He encourages her to share his story. Erin is in fact quite a good storyteller, so she begins to consider a career as a travelling storyteller. She decides to charge clients for her time (in hours).

a. [3 points] Shown below are graphs of the cost, C , and marginal revenue, MR , of Erin's potential storytelling business. Note that both graphs are continuous and piecewise linear.

Carefully sketch the graph of Erin's marginal cost function on the same axes as the given graph of her marginal revenue. (That is, draw the graph of marginal cost on the set of axes on the right.)



b. [3 points] Let $\pi(q)$ be Erin's profit from q hours of work as a travelling storyteller. Estimate all the critical points of $\pi(q)$ for $0 < q < 40$.

Answer: critical point(s) at $q =$ _____

c. [4 points] If she can spend at most 40 hours on this venture, how many hours of work as a travelling storyteller should Erin do in order to maximize her profit? What is her maximum possible profit (in dollars)? (Assume that her revenue is 0 if she spends 0 hours storytelling.) *Briefly indicate your reasoning.*

Answer: Maximum profit occurs at $q =$ _____