1. Since $C(50) = 2000$ and $C'(50) = 35$, we know that the cost of producing 50 items is $2000 and that at this production level, costs are increasing at $35 per item. If costs continue to increase at this rate, then the cost of producing 52 items would be $2070. Similarly the cost of producing 49 items would have been $1965.

2. (a) At $q = 80$, marginal cost (MC) is greater than marginal revenue (MR) since the slope on the cost graph is greater than the slope on the revenue graph.

(b) Increase production since $MR > MC$ at $q = 50$. In this case, the company will be increasing its profits.

(c) Increase production since $MR > MC$ at $q = 20$. In this case, the company will be reducing its losses.

(d) Maximum profit occurs at $q \approx 70$ where the profit is $R(70) - C(70) = $7000 - $4000 = $3000.

(e) $MR = MC$ at $q \approx 70$ and $q \approx 8$. The company obtains its maximum profit at $q \approx 70$ and suffers its greatest loss at $q \approx 8.$