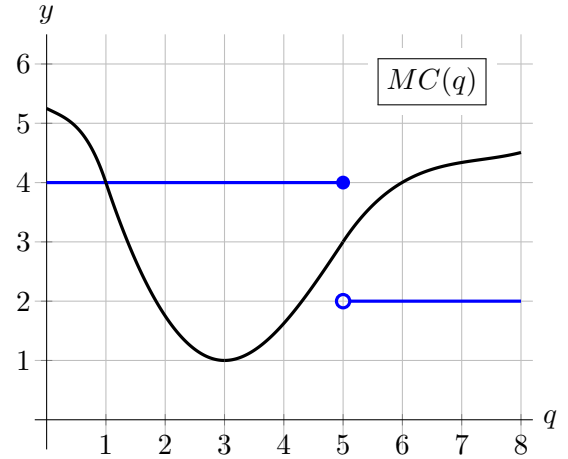


7. [9 points]

Anna is interested in selling some feed corn to a pair of local farms, and is trying to determine the optimal amount to sell. One farm is willing to buy up to 5000 bushels at a price of \$4 per bushel, while the other is willing to buy up to 3000 bushels at a price of \$2 per bushel. The graph to the right shows the marginal cost  $MC(q)$ , in thousands of dollars per thousand bushels, of  $q$  thousand bushels of corn.



Assume Anna sells as much corn as she can to the farm paying \$4 per bushel before selling any to the farm paying \$2 per bushel.

a. [2 points] On the axes above, carefully sketch the graph of the marginal revenue  $MR(q)$ , in thousands of dollars per thousand bushels, of  $q$  thousand bushels of corn.

b. [1 point] What is the total revenue Anna receives for selling 6000 bushels of corn?

- \$20,000       \$22,000      \$24,000      \$26,000      NONE OF THESE

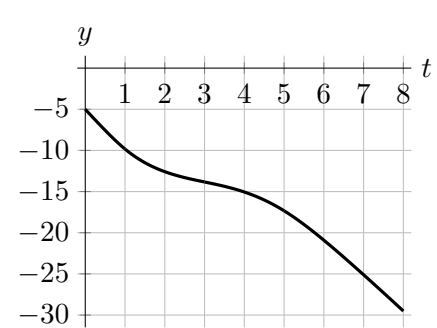
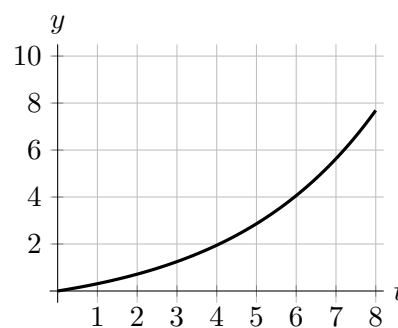
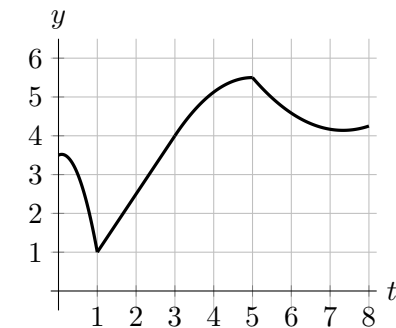
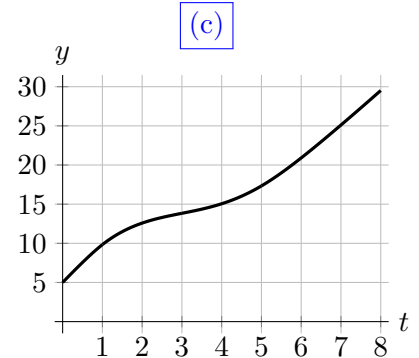
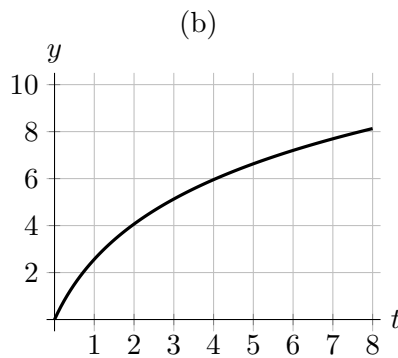
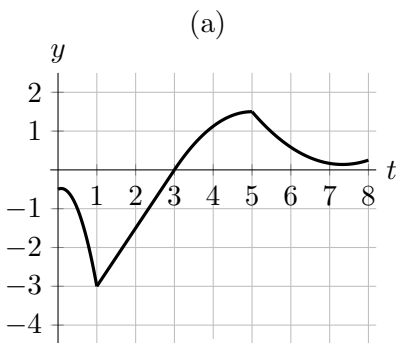
c. [2 points] Recall that *profit*,  $\pi(q)$ , equals total revenue minus total cost. Circle all values of  $q$  below that are critical points of the profit function  $\pi(q)$ .

- $q = 1$        $q = 3$         $q = 5$        $q = 6$       NONE OF THESE

d. [2 points] What production level maximizes profit? Circle all correct answers below.

- $q = 1$        $q = 3$         $q = 5$        $q = 6$        $q = 8$       NONE OF THESE

e. [2 points] Which of the following *could* be the graph of the total cost function? Circle the letters of *all* correct answers below.



(d)

(e)

(f)