

MA 120-04  
§2.3 – 3.1

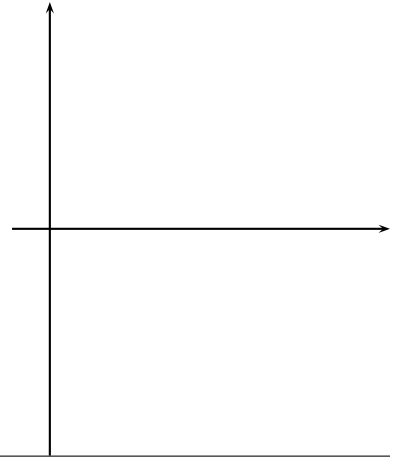
## Quiz #3

score

Name: \_\_\_\_\_

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1. Sketch a graph of a function  $f(x)$  with the properties that  $f'(x) > 0$  for  $0 \leq x \leq 4$ ,  $f''(x) < 0$  for  $0 < x < 2$  and  $f''(x) > 0$  for  $2 < x < 4$ . (5 points)



2. If you are told that a stock has been going up in value recently but at a lower and lower rate, what can you say about the signs of the first and second derivatives of the stock price,  $p(t)$ , as a function of time? Explain. (5 points)

3. Let  $q$  denote the number of items sold,  $C(q)$  the cost of producing those items, and  $R(q)$  the revenue received from the sale of the items. If  $R'(1100) = 25$  and if  $C'(1100) = 30$ , should the company try to sell more items or fewer items to increase its profit? Explain briefly. (5 points)

4. If  $f(x) = 4x^5 - 3x^2 + 5x - 254$  find  $f'(x)$ . (5 points)