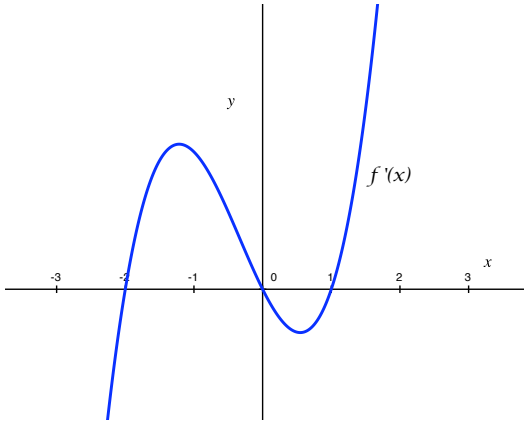


# Math 124 Worksheet #5

October 12, 2007

1. Find an equation of the tangent line to  $y = \frac{\sqrt{x}}{x}$  at  $x = 4$ .
2. Find  $h'''(x)$  if  $h(x) = 2x^3 - 5x^2 - x + 82 + 9e^x$ .
3. The following is a graph of  $f'(x)$ , the derivative of  $f(x)$ .



- (a) For what  $x$ -values does  $f(x)$  have a horizontal tangent?
  - (b) For what  $x$ -values does  $f(x)$  have positive slope?
  - (c) True or False:  $f(-1) > f(0)$
  - (d) For what  $x$ -values is  $f''(x) \leq 0$ ?
4. Suppose the position of a moose (in kilometers) from a lake is given by  $s = f(t) = 2t^4 - 3t^2 + t$  in hours. What is the velocity of the moose at 2 hours? Is the moose's velocity increasing or decreasing at 2 hours? (Hint: What is the moose's acceleration at 2 hours?)