Solutions to Quiz 10

MATH 139-01 and -02
Thursday, October 9, 2003

Be sure to **show your work**. Unsupported answers receive no credit.

Compute the derivative of each function.

1. $f(x) = e^x$

   Solution: $f'(x) = e^x$.

2. $f(x) = \dfrac{1}{x}$

   Solution: $f(x) = x^{-1}$, so $f'(x) = -x^{-2}$.

3. $g(t) = \ln(t^2 - 3)$

   Solution: $g'(t) = \dfrac{1}{t^2-3}(2t) = \dfrac{2t}{t^2-3}$.

4. $h(s) = (5s^3 + 4s - 2)^{4/5}$

   Solution: $h'(s) = \dfrac{4}{5}(5s^3 + 4s - 2)^{-1/5}(15s^2 + 4)$.

5. $x(t) = e^{t^2+3t}$

   Solution: $x'(t) = e^{t^2+3t}(2t + 3)$.