Solutions to Quiz 11

MATH 139-01 and -02
Monday, October 13, 2003

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

Compute the derivative of each function.

1. $f(x) = x^2 e^x$

   Solution: $f'(x) = 2xe^x + e^x x^2 = xe^x(x+2)$.

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

   Solution: $f'(x) = \dfrac{(1)x - 1(x+1)}{x^2} = \dfrac{-1}{x^2}$.

3. $g(t) = 3t^2 - 6t + 2$

   Solution: $g'(t) = 6t - 6$.

4. $h(t) = e^{2t^2-3t}$

   Solution: $h'(t) = (4t-3)e^{2t^2-3t}$

5. $f(x) = (2x^3 - 8x + 4)^5$.

   Solution: $f'(x) = 5(2x^3 - 8x + 4)^4(6x^2 - 8)$.