

Math 112
Spring 2004
Derivative Skills Test Answers - First Attempt
Version 1

These answers have not been simplified.

1. $\frac{dy}{dx} = 24x^3 - 21x^2 + 2$
2. $\frac{dy}{dx} = 3x^2 - \frac{1}{3}(-5x^{-6}) + 2\left(\frac{1}{2}x^{-1/2}\right) - 3(-x^{-2})$
3. $\frac{dy}{dx} = \frac{(3x^2 + 1)(-2x) - (2 - x^2)(6x)}{(3x^2 + 1)^2}$
4. $\frac{dy}{dx} = (x^3 + 2x - 7)(1 - 2x) + (3 + x - x^2)(3x^2 + 2)$
5. $\frac{dy}{dx} = (3x + 1)\frac{1}{2}(6x + 5)^{-1/2}(6) + (6x + 5)^{1/2}(3)$
6. $\frac{dy}{dx} = 4(1 - 3e^x)^3(-3e^x)$
7. $\frac{dy}{dx} = x^2 \frac{1}{x^{1/3}} \cdot \frac{1}{3}x^{-2/3} + \ln(\sqrt[3]{x})(2x)$
8. $\frac{dy}{dx} = \frac{(e^x - e^{-x})(e^x + e^{-x}(-1)) - (e^x + e^{-x})(e^x - e^{-x}(-1))}{(e^x - e^{-x})^2}$
9. $\frac{dy}{dx} = xe^{(x^2-4x+1)}(2x - 4) + e^{(x^2-4x+1)}(1)$
10. $\frac{dy}{dx} = 3\left(\frac{x + 2}{2 - \ln x}\right)^2 \frac{(2 - \ln x)(1) - (x + 2)\left(-\frac{1}{x}\right)}{(2 - \ln x)^2}$