

Math 2315 - Calculus II

Exercise #1 - 2006.01.11

Find $\frac{dy}{dx}$ for the following functions.

1.

$$y = \tan(x) + \cot(x) + \log_2(x)$$

2.

$$y = \sin(x) \cos(x^2)$$

3.

$$y = \tan^{-1}(3x)$$

4.

$$y = \ln\left(\frac{3x^2 - 1}{3x^2 + 1}\right)$$

5.

$$y = e^{\sin(x)} \cos(x)$$

6.

$$y = \frac{\cos(x)}{\sqrt{3 + x^2}}$$

7.

$$\cos(xy) = x^2 + y^2$$

8.

$$f(y)^{g(x)} = h(x)$$

9.

$$f_1(x)^{f_2(y)} = f_3(y)^{f_4(x)}$$

10.

$$y = \log_5\left(e^{\sin(x)} + x\right)$$