Directions: Differentiate the following functions.

1.
$$y = e^{x/2}$$

2.
$$y = \cos^5(x)$$

3.
$$y = (1 + \tan(e^x))^{10}$$

$$4. \ y = x^2 e^{\sin(x)}$$

5.
$$y = \sec(x^2) + \sec^2(x)$$

Directions: Differentiate the following functions.

1.
$$y = 3e^{-x}$$

$$2. \ y = \cos\left(e^{x^2 + x}\right)$$

3.
$$y = (x + \sin(x))^8$$

4.
$$y = \frac{e^x}{\tan(3x+1)}$$

5.
$$y = \sec(x^3) + \sec^3(x)$$