

Find the derivative of each function.

$$1. \ f(x) = \cos(x) - \sin(x) + \cos(4)$$

$$2. \ f(x) = \cos(x) \sin(x)$$

$$3. \ f(x) = \cos(x^3)$$

$$4. \ f(x) = \tan(x)^3$$

$$5. \ f(x) = \sin(x^2 + 4x - 1)^3$$

$$6. \ f(x) = \sec(x)$$

$$\text{Hint: } \sec(x) = \frac{1}{\cos(x)}$$