Derivatives of trigonometric functions

3.9.1

(a)

$$\frac{dy}{dx} = \sec x \cdot \tan x \cdot \cos x^3 + \sec x \cdot (-\sin x^3) \cdot (3x^2)$$

(b)

$$\frac{dy}{dx} = \frac{\tan y^2 - 2xy \cdot \sec^2 x^2}{\tan x^2 - 2xy \cdot \sec^2 y^2}$$

3.9.2

$$f'(1) = 1$$

3.9.3

$$f^{(21)}(x) = 2^{21} \cos(2x)$$

3.9.4

(a) 3

(b) 3