

Find the Derivative of each of the following:

$$1) y = \frac{9x^2 - 5x - 4}{\sqrt{x}}$$

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

$$3) g(x) = \frac{3x^4 + 5}{\cos(x)}$$

$$4) y = 3^{(4x+1)}$$

$$5) h(x) = \sqrt{7 - 3 \ln(x)}$$

$$6) x^2 + 6xy + 12y^2 = 28$$

$$7) m(x) = \tan^{-1}(5x^2 - 4)$$

$$8) y = \log_3 \frac{(4x-2)^6}{3^x}$$

Find the tangent line for the following functions at the given point:

$$9) y = \frac{1+x}{3+e^x} \text{ at point } \left(0, \frac{1}{4}\right)$$

$$10) \quad 3xy = 4x^2 - 4y^2 + 6 \text{ at point } (1, -2)$$