

$$\textcircled{1} \quad y = \frac{\tan(x^2)}{3x} \quad y' = \frac{2x^2 \sec^2(x^2) - \tan(x^2)}{3x^2}$$

$$\textcircled{2} \quad y = x^2 \sqrt{x^5 - x} \quad y' = \frac{x^2(9x^4 - 5)}{2(x^5 - x)^{1/2}}$$

$$\textcircled{3} \quad y = \cos^8(x^3) \quad y' = -24x^2 \cos^7(x^3) \sin(x^3)$$


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$$\textcircled{1} \quad y' = \frac{\sec^2(x^2)(2x)(3x) - \tan(x^2)(3)}{(3x)^2} = \frac{6x^2 \sec^2(x^2) - 3 \tan(x^2)}{9x^2} = \frac{2x^2 \sec^2(x^2) - \tan(x^2)}{3x^2}$$

$$\textcircled{2} \quad y' = 2x(x^5 - x)^{1/2} + x^2 \left( \frac{1}{2}(x^5 - x)^{-1/2} (5x^4 - 1) \right) = 2x(x^5 - x)^{1/2} \cdot \frac{2(x^5 - x)^{1/2}}{2(x^5 - x)^{1/2}} + \frac{x^2(5x^4 - 1)}{2(x^5 - x)^{1/2}} \Rightarrow$$

$$y' = \frac{4x(x^5 - x) + x^2(5x^4 - 1)}{2(x^5 - x)^{1/2}} = \frac{4x^6 - 4x^2 + 5x^6 - x^2}{2(x^5 - x)^{1/2}} = \frac{9x^6 - 5x^2}{2(x^5 - x)^{1/2}} = \frac{x^2(9x^4 - 5)}{2(x^5 - x)^{1/2}}$$

$$\textcircled{3} \quad y' = (\cos(x^3))^8 = 8(\cos(x^3))^7 (-\sin(x^3))(3x^2) = -24x^2 \cos^7(x^3) \sin(x^3)$$