

Math 2215 - Calculus 1

Quiz #5 - 2016.09.05

Solutions

Compute the following derivative:

$$\begin{aligned}\frac{d}{dx} \left(4x^5 - 3\sqrt[5]{x^2} + \frac{5}{x} - 1 \right) &= \frac{d}{dx} \left(4x^5 - 3x^{2/5} + 5x^{-1} - 1 \right) \\ &= 4 \frac{d}{dx} x^5 - 3 \frac{d}{dx} x^{2/5} + 5 \frac{d}{dx} x^{-1} - \frac{d}{dx} 1 \\ &= 4 \cdot 5x^4 - 3 \cdot \frac{2}{5} x^{-3/5} + 5 \cdot (-1)x^{-2} - 0 \\ &= 20x^4 - \frac{6}{5} \frac{1}{\sqrt[5]{x^3}} - \frac{5}{x^2}\end{aligned}$$