

Quiz #5, 10/3  
Math 156 (Calculus I), Fall 2023

Problem 1 is worth 4 points and Problem 2 is worth 6 points, for a total of 10 points. Remember to *show your work* on all problems!

1. Compute the following derivatives.

(a)  $\frac{d}{dx}(2x^4 + 4x^3 - 5x^2 - x + 3)$

(b)  $\frac{d}{dx}(\sqrt[3]{x})$

(c)  $\frac{d}{dx}(10e^x)$

(d)  $\frac{d}{dx}(\sin(x) + \cos(x))$

2. For each of the following functions  $f(x)$ , compute the *second derivative*  $f''(x)$ .

(a)  $f(x) = 2x^4 + 4x^3 - 5x^2 - x + 3$

(b)  $f(x) = \frac{1}{x}$

(c)  $f(x) = e^x + \sin(x) + \cos(x)$