

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [2 points] Compute the derivative of $f(x) = \sqrt[3]{x} - \frac{16}{\sqrt{x^3}}$ and write your answer in root form.

2. [4 points] Find the derivative of $f(x) = (x^5 + 3x^2)(x^3 - x)$ in two different ways.

1st Way: $f'(x) =$

2nd Way: $f'(x) =$

3. [4 points] Find an equation for the tangent line to the graph of $f(x) = \frac{x^2 + 7}{x^3 - 5x}$ at $x = 1$.