

YOUR NAME: _____

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

1. Compute the following derivatives using the appropriate rules:

(a) $((x^2 - 5)(x^3 + 7x^2 - 3))' =$

(b) $\left(\frac{x^3}{x-1}\right)' =$

2. Find an equation for the tangent line to the graph of $f(x) = (x^2 - 3x)^3$ at the point $x = 1$.

3. Compute the derivative of the function

$$f(x) = \frac{1}{\sqrt[5]{(x^3 - 2x^2 - 1)^3}}.$$

Write your answer in root form.