QUIZ 6 - MATH 112 Friday, October 8

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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. [4 points] Compute the following derivatives:

   (a) $\left[(x^3+7x)^8\right]' =$

   (b) $\left[\left(\dfrac{x+1}{x-3}\right)^7\right]' =$

2. [4 points] Find an equation for the tangent line to the graph of $f(x) = \sqrt[3]{7x+29}$ at $x = -3$.

3. [4 points] Consider the function $f(x) = x^3 + 6x^2 - 36x - 30$.

   (a) Compute $f'(x)$ and find the critical points.

   (b) Create the sign table for f' and, as in class, summarize in the last line of the table the intervals of monotonicity (where f is increasing/decreasing) and the local extrema (local max/min points) of f.