QUIZ 3 - MATH 151

Friday, September 30

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 limit $\lim_{x \to +\infty} (\sqrt{x^2 - 5} - x^2)$. Show all work.

2. Compute the limit $\lim_{x \to -\infty} \frac{x^2 - 3}{5x^3 + 7x - 1}$. Show all work.

3. Consider the function $f(x) = \sqrt{5 - x}$.

   (a) Find a formula for the function $f'(a)$ using the definition of the derivative.

   (b) What is the slope of the tangent line to the graph of $y = f(x)$ at $x = 4$?

   (c) Find an equation for the tangent line to the graph of $y = f(x)$ at $x = 4$.