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

$$\lim_{x \to \frac{1}{2}} \frac{1 - 2x}{8x^2 + 2x - 3} =$$

2. Let $f(x) = \sqrt{5x + 1}$.

    (a) Use the limit definition of the derivative to find the slope of the tangent line to the graph of $y = f(x)$ at $x = 3$. Show all your work.

    (b) Find an equation of the tangent line to the graph of $y = f(x)$ at $x = 3$.