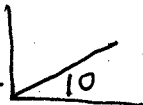


MAT1500-03/11 Quiz 4 Print Name (Last, First) _____



Show all work on this sheet, including mental steps, in a clearly organized way that speaks for itself. Use proper mathematical notation. Box final short answers.

$$f(x) = 2x^2 - 3, \quad g(x) = \frac{3x^2 - 1}{1 - x^2}$$

- ① a) Find the slope of the tangent line to f at a (or at " $x=a$ "). [using limits]
- b) Use your result to write the equation of the tangent line to f at $x=1$, and give your final result with y expressed as a function of x .
- ② a) Evaluate the limits necessary to determine if g has any horizontal asymptotes.
- b) Give the equations of any horizontal asymptotes you find.