Group Work 7: Finding the Equation of a Tangent Line

\[ f(x) = x^3 - 3x^2 - 9x + 11 \]

(a) Find \( f'(x) \).
Use the techniques of Section 2.3. (That is, DO NOT use the Definition of the Derivative.)
Show all details clearly and use correct notation.

(b) Find the slope of the line that is tangent to the graph of \( f \) at \( x = 3 \).

(c) Find the slope of the line that is tangent to the graph of \( f \) at \( x = 0 \).

(d) Find the \( x \)-coordinates of all points on the graph of \( f \) that have horizontal tangent lines.

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(e) Find the equation of the line that is tangent to the graph of $f$ at $x = 2$. Show all details clearly and present your equation in slope intercept form.