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. Use the product rule to compute the derivative of $f(x) = (x^7 - 10x)(x^3 + 5)$.

2. Find an equation for the tangent line to the graph of $f(x) = \dfrac{x+3}{x-1}$ at $x = 3$.

3. Suppose a moving object is at position $s(t) = t^3 - 4t^2 + 7$ meters at time t seconds into its motion. Find the velocity and acceleration of the object at time $t = 5$ seconds.