Instructions: Show Your Work!

1. (3 pts) Find all points at which the tangent line to the curve \( x^2 + 3xy + 9y^2 = 3 \) is horizontal.

2. (3 pts) Find \( f'(0) \) where
\[
f(x) = \frac{(x - 1)(2x - 1)^2}{(3x - 1)^3(4x - 1)^4}
\]

3. (4 pts) A man 2 m tall walks directly away from a street light that is 8 m high at the rate of 3/2 m/sec. How fast is the length of his shadow changing?