Problem of the Week-4: A Complicated Looking Limit

(that simplifies nicely using the definition of derivative and some algebraic tricks)

Let $g(x) = \ln(x)$. Evaluate the limit.

$$\lim_{p \to 0} \left(\lim_{q \to 0} \left(\frac{g(27 + 27p + 9p^2 + p^3) - g(27)}{4pq} - \frac{12 \cdot g(3 + p + q) - 12 \cdot g(3 + q)}{16pq} \right) \right)$$

Clearly show your steps

[1]