2013 Q11

11. A curve has equation

\[ x^2 + 4xy + y^2 + 11 = 0. \]

Find the values of \( \frac{dy}{dx} \) and \( \frac{d^2y}{dx^2} \) at the point \((-2, 3)\).

Answers

\[ \frac{dy}{dx} = 4 \quad \frac{d^2y}{dx^2} = 33 \]