1. Compute the derivative $y'$ for the curve  
\[ \sin(x^2 + y) = x^2 + 2x + 3y \]

at the point $x = 0, y = 0$.

**Solution:** Let’s differentiate with respect to $x$:
\[ \cos(x^2 + y)(2x + y') = 2x + 2 + 3y'. \]

So at $(0,0)$ we have
\[
(1)(y') = 2 + 3y' \\
\iff -2y' = 2 \\
\iff y' = -1.
\]