

Math.240, QUIZ 3**Surname & Name:**

Question : Find the value of b for which the differential equation

$$(ye^{2xy} + x)dx + bxe^{2xy}dy = 0$$

is exact.

$$\begin{aligned}\text{The equation is exact} &\Leftrightarrow \frac{\partial}{\partial y}(ye^{2xy} + x) = \frac{\partial}{\partial x}(bxe^{2xy}) \\ &\Leftrightarrow b = 1.\end{aligned}$$