

- (a) $f(\textcolor{red}{3}, 0) = \textcolor{red}{3}^2 e^{4(\textcolor{red}{3})(0)} = \textcolor{red}{9}(1) = \textcolor{red}{9}$
- (b) Since both x^2 and the exponential function are defined everywhere, $x^2 e^{\textcolor{red}{4}xy}$ is defined for all choices of values for x and y . Thus the domain of f is $\mathbb{R} \times \mathbb{R}$.
- (c) Because the range of $g(x, y) = \textcolor{red}{4}xy$ is $\mathbb{R}$, and the range of e^x is $(0, \infty)$, the range of $e^{g(x,y)} = e^{\textcolor{red}{4}xy}$ is $(0, \infty)$.
The range of x^2 is $[0, \infty)$, so the range of the product $x^2 e^{\textcolor{red}{4}xy}$ is $[0, \infty)$.