Math 450b
Homework 2

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1. Verify the chain rule for $h(x, y, z) = f(u(x, y, z), v(x, y, z))$, where $u(x, y, z) = xe^y$, $v(x, y, z) = (\sin x)yz$, and $f(u, v) = u^2 + v \sin u$.

Proof

$$\begin{aligned} h &= f(u, v) \\ f(u, v) &= u^2 + v \sin u \\ u &= xe^y \\ v &= (\sin x)yz \end{aligned}$$

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