

Chain rule and total differentials

1. Find the total differential of $w = ze^{(x+y)}$ at $(0, 0, 1)$.
2. Suppose $w = ze^{(x+y)}$ and $x = t$, $y = t^2$, $z = t^3$. Compute $\frac{dw}{dt}$ and evaluate it when $t = 2$.

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