Problems: Non-independent Variables

1. Find the total differential for $w = zxe^y + xe^z + ye^z$.

2. With w as above, suppose we have $x = t$, $y = t^2$ and $z = t^3$. Write dw in terms of dt.

3. Now suppose w is as above and $x^2y + y^2x = 1$. Assuming x is the independent variable, find $\dfrac{\partial w}{\partial x}$.

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