

Section 14.5: Additional Problems

1. Write out the Chain Rule for the case where $w = f(x, y, z)$ and $x = x(u, v)$, $y = y(u, v)$, and $z = z(u, v)$
2. Compute w_a for $w = xy^2z^3$ with $x = t^3 + at^4$, $y = a^2t$, and $z = ae^{at}$.
3. Suppose $g(a, b) = f(x, y)$ with $x = a^b + b^4$, and $y = e^{2a} + \tan(b^3)$. Give the formula for g_a and g_b . Compute all partials that are possible.
4. Find z_y for $x^4y^3 + z^2e^{2y} = 2y + \tan(4z)$
5. Find z_x for $x^2 \sin(x^3 + y^2) + yz^2 = \cos(4z)$