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1 Function and its derivative

$$f(xui, yw, zr) = xui^{yw^{zr}}$$

$$xui = 3$$
$$yw = 4$$
$$zr = 5$$
$$f(3, 4, 5) = inf$$

$$\frac{\partial f}{\partial xui} =$$

$$xui^{yw^{zr}} \cdot (\frac{1 \cdot yw^{zr}}{xui} + yw^{zr} \cdot (\frac{0 \cdot zr}{yw} + 0 \cdot \ln yw) \cdot \ln xui)$$

$$\frac{\partial f}{\partial xui} = xui^{yw^{zr}} \cdot \frac{yw^{zr}}{xui}$$

$$\frac{\partial f}{\partial xui}(3, 4, 5) = inf$$

$$\frac{\partial f}{\partial yw} =$$

$$xui^{yw^{zr}} \cdot (\frac{0 \cdot yw^{zr}}{xui} + yw^{zr} \cdot (\frac{1 \cdot zr}{yw} + 0 \cdot \ln yw) \cdot \ln xui)$$

$$\frac{\partial f}{\partial yw} = xui^{yw^{zr}} \cdot yw^{zr} \cdot \frac{zr}{yw} \cdot \ln xui$$

$$\frac{\partial f}{\partial yw}(3, 4, 5) = inf$$

$$\frac{\partial f}{\partial zr} = xui^{yw^{zr}} \cdot (\frac{0 \cdot yw^{zr}}{xui} + yw^{zr} \cdot (\frac{0 \cdot zr}{yw} + 1 \cdot \ln yw) \cdot \ln xui)$$

$$\frac{\partial f}{\partial zr} = xui^{yw^{zr}} \cdot yw^{zr} \cdot \ln yw \cdot \ln xui$$

$$\frac{\partial f}{\partial zr}(3, 4, 5) = inf$$