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1 Function and its derivative

$$f(x, y, z) = ((\cos \ln x^2 + \sin \frac{1}{y}) + 5^z)$$

$$x = 2.5$$
$$y = 4.1$$
$$z = 2.7$$
$$f(2.5, 4.1, 2.7) = 77.1119$$

$$\frac{\partial f}{\partial x} = ((-1 \cdot \sin \ln x^2 . \frac{2 \cdot x^1 \cdot 1}{x^2} + \cos \frac{1}{y} . \frac{(0 \cdot y - 1 \cdot 0)}{y \cdot y}) + 5^z \cdot \ln 5 \cdot 0)$$

$$\frac{\partial f}{\partial x} = -1 \cdot \sin \ln x^2 \cdot \frac{2 \cdot x}{x^2}$$

$$\frac{\partial f}{\partial x}(2.5, 4.1, 2.7) = -0.772744$$

$$\frac{\partial f}{\partial y} = ((-1 \cdot \sin \ln x^2 . \frac{2 \cdot x^1 \cdot 0}{x^2} + \cos \frac{1}{y} . \frac{(0 \cdot y - 1 \cdot 1)}{y \cdot y}) + 5^z \cdot \ln 5 \cdot 0)$$

$$\frac{\partial f}{\partial y} = \cos \frac{1}{y} \cdot \frac{-1}{y \cdot y}$$

$$\frac{\partial f}{\partial y}(2.5, 4.1, 2.7) = -0.0577277$$

$$\frac{\partial f}{\partial z} = ((-1 \cdot \sin \ln x^2 . \frac{2 \cdot x^1 \cdot 0}{x^2} + \cos \frac{1}{y} . \frac{(0 \cdot y - 1 \cdot 0)}{y \cdot y}) + 5^z \cdot \ln 5 \cdot 1)$$

$$\frac{\partial f}{\partial z} = 5^z \cdot 1.60944$$

$$\frac{\partial f}{\partial z}(2.5, 4.1, 2.7) = 124.135$$