Differentiator by Emil Galimov

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1 Function and its derivative

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

$$x = 1$$
$$y = 1$$
$$z = 1$$
$$f(1,1,1) = 6.84147$$

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

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

$$\frac{\partial f}{\partial x}(1,1,1) = -0$$

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

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

$$\frac{\partial f}{\partial y}(1,1,1) = -0.540302$$

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

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

$$\frac{\partial f}{\partial z}(1,1,1) = 8.04719$$