

Taking the derivative of a function.

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1 Introduction

Rest in peace, my brothers, for it is coming...

2 Variables processing.

Variables that you entered during initialization:

$$x = 2.0111$$

$$y = 6.1561$$

$$z = 1.1651$$

3 The entered function.

$$f(x, y, z) = \arctg(x \cdot y^2 + z \cdot x^2)$$

4 Variable substitution in entered function.

$$\frac{\partial f(2.0111, 6.1561, 1.1651)}{\partial x} = 1.55844$$

5 Simplified first derivative of the variable x.

$$\frac{\partial f(x, y, z)}{\partial x} = \frac{y^2 + x^2 \cdot \frac{2}{x} \cdot z}{1 + (x \cdot y^2 + z \cdot x^2)^2}$$

6 Variable substitution in first derivative of x.

$$\frac{\partial f(2.0111, 6.1561, 1.1651)}{\partial x} = 0.006501$$

7 Simplified first derivative of the variable y.

$$\frac{\partial f(x, y, z)}{\partial y} = \frac{y^2 \cdot \frac{2}{y} \cdot x}{1 + (x \cdot y^2 + z \cdot x^2)^2}$$

8 Variable substitution in first derivative of y.

$$\frac{\partial f(2.0111, 6.1561, 1.1651)}{\partial y} = 0.00378011$$

9 Simplified first derivative of the variable z.

$$\frac{\partial f(x, y, z)}{\partial z} = \frac{x^2}{1 + (x \cdot y^2 + z \cdot x^2)^2}$$

10 Variable substitution in first derivative of z.

$$\frac{\partial f(2.0111, 6.1561, 1.1651)}{\partial z} = 0.000617451$$