



Calculus 3 Workbook

Differentials

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MATH

DIFFERENTIAL OF A MULTIVARIABLE FUNCTION

- 1. Find the differential of the multivariable function.

$$f(r, \theta) = \frac{r^2}{\sin 2\theta + \cos 2\theta}$$

- 2. Find the differential of the multivariable function.

$$U(u, v, w) = \frac{(2u + 1)^2(3v + 4)}{\sqrt{w - 2}}$$

- 3. Find the differential of the multivariable function at $(-6, 2)$.

$$f(x, y) = 4 \log_2(x^2 - 2xy + y^2)$$

- 4. Find the point(s) where the differential of the multivariable function is equal to 0 (i.e., find the critical points of the function).

$$f(s, t) = 3t^4 - 2t^2s - s^2 + 16t + 5$$

- 5. Find and identify the set of point(s) where the differential of the multivariable function $f(x, y)$ doesn't depend on dy .



$$f(x, y) = \cos(e^{x^2+y})$$



