

微積分作業7

May 15, 2026

1 Find both first partial derivatives.

$$z = \ln \sqrt{xy}$$

2 Find the total differential.

$$z = 2x^3y - 8xy^4$$

3 Using Different Methods , Find $\frac{dw}{dt}$:

- by using the appropriate Chain Rule and
- by converting w to a function of t before differentiating.

$$w = \cos(x - y), \quad x = t^2, \quad y = 1$$