

Volume of a cylinder? Piece of cake.

Unlock Step-by-Step



$$\frac{d}{dx} \left(\frac{\left(\frac{(x \cdot x)}{R} \right)}{\left(1 + \text{sqrt} \left(1 - (1 + k) \cdot \frac{(x \cdot x)}{(R \cdot R)} \right) \right)} + d \right)$$

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NATURAL LANGUAGE

MATH INPUT

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CALCULUS & SUMS

Derivative

☒ Step-by-step solution

$$\frac{\partial}{\partial x} \left(\frac{\frac{x x}{R}}{1 + \sqrt{1 - \frac{(1+k)(x x)}{R R}}} + d \right) = \frac{R x \sqrt{1 - \frac{(k+1) x^2}{R^2}}}{R^2 - (k + 1) x^2}$$

Alternate form assuming k, R, and x are real

$$\frac{R x}{\sqrt{R^4 - (k + 1) R^2 x^2}}$$

Alternate forms

$$\frac{x}{R \sqrt{1 - \frac{(k+1) x^2}{R^2}}}$$

$$\dots \left(\frac{1}{R^2} \sqrt{1 - \frac{(k+1) x^2}{R^2}} \right) \dots \left(\frac{1}{R^2} \sqrt{1 - \frac{(k+1) x^2}{R^2}} \right) \dots \left(\frac{1}{R^2} \sqrt{1 - \frac{(k+1) x^2}{R^2}} \right) \dots$$

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