

Worked Solutions

Pure Maths, Differential Calculus,

sheet PM-DIFF-DF-01

The Power Rule (Derivative Formula) Q. 4

differentiate $y = \frac{2}{\sqrt{x}}$

rewrite the equation using exponents:

$$y = 2x^{-1/2}$$

use the Power Rule for differentiation:

$$\frac{d}{dx} [x^n] = n \cdot x^{n-1}$$

$$\frac{dy}{dx} = 2 \cdot \left(-\frac{1}{2}\right)x^{-3/2}$$

final answer:

$$\frac{dy}{dx} = -\frac{1}{x^{3/2}}$$