

Worked Solutions

Pure Maths, Differential Calculus,

sheet PM-DIFF-DF-01

The Power Rule (Derivative Formula) Q. 3

differentiate $y = 3\sqrt{x}$

rewriting the square root in exponential form

:

$$y = 3x^{1/2}$$

using the power rule for differentiation:

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

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

final answer:

$$\frac{dy}{dx} = \frac{3}{2\sqrt{x}}$$