

Worked Solutions

Pure Maths, Differential Calculus,

sheet PM-DIFF-CR-01

The Power Rule (Derivative Formula) Q. 1

differentiate the function $y = 2x^2 - 3$

Using the **Power Rule**

$$\left(\frac{d}{dx} [x^n] = nx^{n-1}\right)$$

differentiating the first term,

$$\frac{d}{dx} [2x^2] = 2 \cdot 2x^{2-1} = 4x$$

differentiating the second term,

$$\frac{d}{dx} [-3] = 0$$

combining the two results,

$$\frac{dy}{dx} = 4x + 0 = 4x$$

answer: $\frac{dy}{dx} = 4x$