# DIFFERENTIATION
### THE RULE FOR POLYNOMIALS

## NO CALCULATOR

Ref: G911. **1S1**

| **A1** Differentiate $x^5$ | **A2** Differentiate $x^7$ | **A3** Differentiate $x^0$ | **A4** Differentiate $x^1$ |
|---|---|---|---|
| **B1** Differentiate $9x$ | **B2** Differentiate $9$ | **B3** Differentiate $5x$ | **B4** Differentiate $5$ |
| **C1** Differentiate $5x^3$ | **C2** Differentiate $3x^5$ | **C3** Differentiate $3x^6$ | **C4** Differentiate $6x^{-2}$ |
| **D1** Differentiate $\dfrac{1}{2}x^2$ | **D2** Differentiate $\dfrac{1}{3}x^3$ | **D3** Differentiate $\dfrac{1}{2}x^4$ | **D4** Differentiate $\dfrac{3}{4}x$ |
| **E1** Differentiate $x$ | **E2** Differentiate $-1$ | **E3** Differentiate $4x^{2.5}$ | **E4** Differentiate $4x^{0.5}$ |

Worksheets, Videos, Online Assessments and Exam Solutions

# DIFFERENTIATION
## THE RULE FOR POLYNOMIALS

**NO CALCULATOR**

Ref: G911. **1S1**

| | | | |
|---|---|---|---|
| **A1** Differentiate $x^5$ $\frac{dy}{dx} = 5x^4$ | **A2** Differentiate $x^7$ $\frac{dy}{dx} = 7x^6$ | **A3** Differentiate $x^0$ $\frac{dy}{dx} = 0$ | **A4** Differentiate $x^1$ $\frac{dy}{dx} = 1x^0$ $= 1$ |
| **B1** Differentiate $9x$ $\frac{dy}{dx} = 9$ | **B2** Differentiate $9$ $\frac{dy}{dx} = 0$ | **B3** Differentiate $5x$ $\frac{dy}{dx} = 5$ | **B4** Differentiate $5$ $\frac{dy}{dx} = 0$ |
| **C1** Differentiate $5x^3$ $\frac{dy}{dx} = 15x^2$ | **C2** Differentiate $3x^5$ $\frac{dy}{dx} = 15x^4$ | **C3** Differentiate $3x^6$ $\frac{dy}{dx} = 18x^5$ | **C4** Differentiate $6x^{-2}$ $\frac{dy}{dx} = -12x^{-3}$ |
| **D1** Differentiate $\frac{1}{2}x^2$ $\frac{dy}{dx} = x^1$ $= x$ | **D2** Differentiate $\frac{1}{3}x^3$ $\frac{dy}{dx} = x^2$ | **D3** Differentiate $\frac{1}{2}x^4$ $\frac{dy}{dx} = 2x^3$ | **D4** Differentiate $\frac{3}{4}x$ $\frac{dy}{dx} = \frac{3}{4}$ |
| **E1** Differentiate $x$ $\frac{dy}{dx} = 1$ | **E2** Differentiate $-1$ $\frac{dy}{dx} = 0$ | **E3** Differentiate $4x^{2.5}$ $\frac{dy}{dx} = 10x^{1.5}$ | **E4** Differentiate $4x^{0.5}$ $\frac{dy}{dx} = 2x^{-0.5}$ |