



REVIEW

DIFFERENTIATION THE RULE FOR POLYNOMIALS

Ref: G989. **7R1**

A1 Differentiate $x^3 + x^2 + x$	A2 Differentiate $x^4 + x^2 + 4x$	A3 Differentiate $x^3 + 6x + 3$	A4 Differentiate $x^2 + 3x - 7$
B1 Differentiate $2x^3 + 4x^2 + 6x$	B2 Differentiate $3x^4 + 3x^3 - 3x$	B3 Differentiate $5x^3 - 6x^2 + 11$	B4 Differentiate $x^3 - \frac{5}{2}x^2 + 4x$
C1 Differentiate $4x^2 + 3x^{-1}$	C2 Differentiate $5x^3 + 2x^{-1} + 13$	C3 Differentiate $x^2 - 4x^{-1} + 2x^{-2}$	C4 Differentiate $2x^3 - 4x^{\frac{1}{2}}$
D1 Differentiate $x^2 + \frac{2}{x}$	D2 Differentiate $x^3 + \frac{5}{x^2}$	D3 Differentiate $x^2 + \sqrt{x}$	D4 Differentiate $\frac{3}{x} + 4\sqrt{x}$



DIFFERENTIATION THE RULE FOR POLYNOMIALS

Ref: G989. **7R1**

<p>A1 Differentiate</p> $x^3 + x^2 + x$ $3x^2 + 2x + 1$	<p>A2 Differentiate</p> $x^4 + x^2 + 4x$ $4x^3 + 2x + 4$	<p>A3 Differentiate</p> $x^3 + 6x + 3$ $3x^2 + 6$	<p>A4 Differentiate</p> $x^2 + 3x - 7$ $2x + 3$
<p>B1 Differentiate</p> $2x^3 + 4x^2 + 6x$ $6x^2 + 8x + 6$	<p>B2 Differentiate</p> $3x^4 + 3x^3 - 3x$ $12x^3 + 9x^2 - 3$	<p>B3 Differentiate</p> $5x^3 - 6x^2 + 11$ $15x^2 - 12x$	<p>B4 Differentiate</p> $x^3 - \frac{5}{2}x^2 + 4x$ $3x^2 - 5x + 4$
<p>C1 Differentiate</p> $4x^2 + 3x^{-1}$ $8x - 3x^{-2} = 8x - \frac{3}{x^2}$	<p>C2 Differentiate</p> $5x^3 + 2x^{-1} + 13$ $15x^2 - 2x^{-2} = 15x^2 - \frac{2}{x^2}$	<p>C3 Differentiate</p> $x^2 - 4x^{-1} + 2x^{-2}$ $2x + 4x^{-2} - 4x^{-3} = 2x + \frac{4}{x^2} - \frac{4}{x^3}$	<p>C4 Differentiate</p> $2x^3 - 4x^{\frac{1}{2}}$ $6x^2 - 2x^{\frac{1}{2}} = 6x^2 - \frac{2}{\sqrt{x}}$
<p>D1 Differentiate</p> $x^2 + \frac{2}{x} = x^2 + 2x^{-1}$ $\Rightarrow \frac{dy}{dx} = 2x - 2x^{-2}$	<p>D2 Differentiate</p> $x^3 + \frac{5}{x^2} = x^3 + 5x^{-2}$ $\Rightarrow \frac{dy}{dx} = 3x^2 - 10x^{-3}$	<p>D3 Differentiate</p> $x^2 + \sqrt{x} = x^2 + x^{\frac{1}{2}}$ $\Rightarrow \frac{dy}{dx} = 2x + \frac{1}{2}x^{-\frac{1}{2}}$	<p>D4 Differentiate</p> $\frac{3}{x} + 4\sqrt{x} = 3x^{-1} + 4x^{\frac{1}{2}}$ $\Rightarrow \frac{dy}{dx} = -3x^{-2} + 2x^{-\frac{1}{2}}$