The Practise Ground

Class 11-12 Maths

Differentiation Rules

Four rules and the standard derivatives

1

$d/dx\,(x^n) = n\,x^{(n-1)}$

Power rule

Bring the power down, reduce it by 1

2

$d/dx\,(uv) = u\,v' + v\,u'$

Product rule

Derivative of a product of two functions

3

$d/dx\,(u/v) = (v\,u' - u\,v') / v^2$

Quotient rule

Derivative of a ratio of two functions

4

$dy/dx = dy/du \times du/dx$

Chain rule

Differentiate the outer function, then the inner

Standard results

$d/dx\,(\sin x) = \cos x$

$d/dx\,(\cos x) = -\sin x$

$d/dx\,(e^x) = e^x$ $d/dx\,(\ln x) = 1/x$

Quick examples

$y = x^3 + 2x$ gives $dy/dx = 3x^2 + 2$

$y = (3x + 1)^2$ gives $dy/dx = 2(3x + 1) \times 3 = 6(3x + 1)$

Think you've got it? Test yourself.

Scan for a free Maths quiz.

thepractiseground.in

Free for every class. Print and display it anywhere.