



QUESTION WORKBOOK

The product, quotient and chain rules

Differentiation · Year 12–13

7 questions · 20 marks

PRINT EDITION

SECTION A · Warm-up**A1** Differentiate $y = (2x + 1)^4$. [2]

A2 Differentiate $y = e^{x^2}$. [2]

SECTION B · Standard**B1** Differentiate $y = (x^2 - 3)^6$. [3]

B2 Differentiate $y = x^3 e^{2x}$. [3]

B3 Differentiate $y = x \sin x$. [3]

B4 Differentiate $y = (2x + 1)/(x^2 + 1)$, and find the gradient at $x = 0$. [4]

SECTION C · Stretch

C1 Differentiate $y = \sin^3 x$. [3]