Marked example 1

Paper 1 style · No calculator

1 5 marks SL 1.5 · 1.7 ●●○ Typical

Answer the following without a calculator.

(a) Find the value of $27^{\frac{2}{3}}$. [1]

(b) Find the value of $\left(\frac{1}{4}\right)^{-\frac{3}{2}}$. [1]

(c) Write $4^x \times 8^{x-1}$ as a power of 2. [2]

(d) Hence solve $4^x \times 8^{x-1} = 128$. [1]

MARKSCHEME (a)

9

A1

Total 1 mark

MARKSCHEME (b)

8

A1

Total 1 mark

MARKSCHEME (c)

$2^{2x} \times 2^{3(x-1)}$

$= 2^{5x-3}$

(M1)

A1

Total 2 marks

MARKSCHEME (d)

$5x - 3 = 7,\ x = 2$

A1

Total 1 mark

Note $128 = 2^7$.

Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software.
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