Exercise 2

Paper 1 style · No calculator

2 4 marks SL 1.8 ●●○ Typical

The first two terms of a geometric series are 45 and 30.

(a) Find the common ratio. [1]

(b) Explain why the series has a sum to infinity. [1]

(c) Find the sum to infinity. [2]

The markscheme is on the next page: try the question first. Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization.
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MARKSCHEME (a)

$r = \frac{30}{45} = \frac{2}{3}$

A1

Total 1 mark

MARKSCHEME (b)

$|r| < 1$

R1

Total 1 mark

MARKSCHEME (c)

$S_\infty = \frac{45}{1 - \frac{2}{3}}$

(M1)

$= 135$

A1

Total 2 marks