Exercise 1

Paper 1 style · No calculator

1 5 marks SL 1.3 ●○○ Routine

In a geometric sequence, $u_3 = 18$ and $u_6 = 486$.

(a) Find the common ratio. **[2]**

(b) Find the first term. **[1]**

(c) Find the sum of the first 5 terms. **[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)

$r^3 = \frac{486}{18} = 27$ **(M1)**

$r = 3$ **A1**

Total 2 marks

MARKSCHEME (b)

$u_1 = \frac{18}{9} = 2$ **A1**

Total 1 mark

MARKSCHEME (c)

$S_5 = \frac{2\left(3^5 - 1\right)}{3 - 1}$ **(M1)**

$= 242$ **A1**

Total 2 marks