Answer key

The method: Geometric sequences

Each term multiplies by the common ratio r. The nth term is $a_1 \cdot r^{n-1}$.

128, 64, 32, 16, ... term 5 = 8

$r = 64 \div 128 = \frac{1}{2}$ the common ratio

$128 \times (\frac{1}{2})^4 = 8$ $a_n = a_1 \cdot r^{n-1}$

5, 15, 45, 135, ... term 6 = 1215

$r = 15 \div 5 = 3$ the common ratio

$5 \times (3)^5 = 1215$ $a_n = a_1 \cdot r^{n-1}$

Problems 1 and 2 worked out · Version 0A

2, 4, 8, 16, ... term 8 = 256

$r = 4 \div 2 = 2$ the common ratio

$2 \times (2)^7 = 256$ $a_n = a_1 \cdot r^{n-1}$

128, 64, 32, 16, ... term 8 = 1

$r = 64 \div 128 = \frac{1}{2}$ the common ratio

$128 \times (\frac{1}{2})^7 = 1$ $a_n = a_1 \cdot r^{n-1}$

Geometric sequences · Version 0A

1) 256 2) 1 3) $\frac{1}{3}$ 4) 729 5) 13122 6) 48 7) −4

8) $\frac{1}{27}$ 9) −486 10) 64 11) 1 12) −768 13) 4
14) 1 15) 1024