

QT Sequences

1. The first four terms in a sequence are

7 13 19 25

(a) Write down the next two terms in the sequence.

(b) Explain how you got your answer.

(a) $7 \quad 13 \quad 19 \quad 25 \quad \underline{31} \quad \underline{37}$
 $\underbrace{\quad} +6 \quad \underbrace{\quad} +6 \quad \underbrace{\quad} +6 \quad \underbrace{\quad} +6 \quad \underbrace{\quad} +6$

(b) Adding 6 each time

2. The n th term of a sequence is $4n + 4$

(a) Find the first two terms of this sequence

(b) Is 32 a term in the sequence? Show how you got your answer.

(a) 1st term $4(1) + 4 = 8$
2nd term $4(2) + 4 = 12$

(b) $4n + 4 = 32$
 $4n = 28$
 $n = 7$ for 32 is the 7th term.

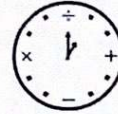
3. The n th term of a sequence is $n^2 + 5$

(a) Find the first three terms of the sequence

(b) Find the 12th term in the sequence.

(a) 1st term $n^2 + 5 = (1)^2 + 5 = 6$
2nd term $= (2)^2 + 5 = 9$
3rd term $= (3)^2 + 5 = 14$

(b) $(12)^2 + 5 = \underline{\underline{149}}$



4. Here are the first five terms of a sequence

32 26 20 14 8

(a) Find the first negative term in the sequence

(b) Is -30 a term in the sequence? Give a reason for your answer.

(a) $32 \xrightarrow{-6} 26 \xrightarrow{-6} 20 \xrightarrow{-6} 14 \xrightarrow{-6} 8 \xrightarrow{-6} 2 \xrightarrow{-6} -4$

(b) $-4 \xrightarrow{-6} -10 \xrightarrow{-6} -16 \xrightarrow{-6} -22 \xrightarrow{-6} -28 \xrightarrow{-6} -34$ 34

5. The first 5 terms of an arithmetic sequence are 5 7 9 11 13

Find an expression, in terms of n , for the n th term of this sequence

zero term
 $\underline{3} \xrightarrow{+2} 5 \xrightarrow{+2} 7 \xrightarrow{+2} 9 \xrightarrow{+2} 11 \xrightarrow{+2} 13$

$2n + 3$

6. The first 5 terms of an arithmetic sequence are 0 -2 -4 -6 -8

(a) Find an expression, in terms of n , for the n th term of this sequence

zero
 $2 \xrightarrow{-2} 0 \xrightarrow{-2} -2 \xrightarrow{-2} -4 \xrightarrow{-2} -6 \xrightarrow{-2} -8$

$-2n + 2$ or $2 - 2n$