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, 13, 19, 25, 31, 37 (+6 +6 +6 +6 +6)

(b) Adding 6 each time

2. The nth 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) $4n + 4 = 32$

$4n = 28$

$n = 7$

Yes 32 is the 7th term.

3. The nth 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) $(12)^2 + 5 = 149$.

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, 26, 20, 14, 8, 2, **-4**

(b) -4, -10, -16, -22, -28, -34, **No**

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

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

zero term: 3; 5, 7, 9, 11, 13; +2

$2n + 3$

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 nth term of this sequence

zero term: 2; 0, -2, -4, -6, -8; -2

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