

**Nth Term of a Sequence**– www.m4ths.com

- (1) Study the following sequence:  
2, 6, 10, 14, 18
- (a) Find the  $n$ th term rule
  - (b) Find the 23<sup>rd</sup> term in the sequence
  - (c) Find the 126<sup>th</sup> term in the sequence
  - (d) Is the number 82 in the sequence?
  - (e) Is the number 114 in the sequence?
  - (f) Is the number 313 in the sequence?

- (2) Study the following arithmetic sequence:  
5, 7, 9, 11, 13
- (a) Find the  $n$ th term rule
  - (b) Find the 17<sup>th</sup> term in the sequence
  - (c) Find the 85<sup>th</sup> term in the sequence
  - (d) Is the number 31 in the sequence?
  - (e) Is the number 82 in the sequence?
  - (f) Is the number 105 in the sequence?

- (3) The shapes below are made from dots and sticks and form a pattern.



- (a) Write an  $n$ th term formula for the number of dots in each square.
- (b) Write an  $n$ th term formula for the number of sticks in each square.
- (c) Find the number of dots in the 33<sup>rd</sup> shape.
- (d) Find the number of sticks in the 75<sup>th</sup> shape
- (e) Is there a shape with 71 dots in it?
- (f) Is there a shape with 71 sticks in it?
- (g) Is there a shape with 81 sticks in it?

- (4) The  $n$ th term formula of a sequence is  $5n - 1$ .
- (a) Write out the first 5 terms of the sequence.
  - (b) Find the 23<sup>rd</sup> term of the sequence.
  - (c) Is the number 79 in the sequences?
  - (d) Find the least number of terms such that the  $n$ th term of the sequence exceeds 250.
  - (e) Find the first term that's greater than the 4<sup>th</sup> cube number.

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