



# Arithmetic Sequences

## Checklist

Use this space to keep track of your progress with this subtopic. Print and file this document together with those from different sub-topics in a file for quick reference.

Task	Complete (tick or cross)	Traffic Light (Red, amber or green)
Watch the video tutorials		
Check you know your calculators skills		
Review the slides		
Review/annotate the flashcards		
Complete the quiz		
Complete the exam style questions		
Check your solutions against the solution videos		
Review any remaining areas you need to.		

## Flashcards

Screen shots of the flash cards



### Arithmetic Sequences

Flashcards

- $U_1$  is the first term of the sequence
- $d$  is the common difference from one term to the next
- $U_n$  is the  $n^{\text{th}}$  term of the sequence

the  $n^{\text{th}}$  term of an arithmetic sequence

$$U_n = U_1 + d(n-1)$$

the sum of an arithmetic sequence

$$S_n = \frac{n}{2} (U_1 + U_n)$$

$n$  is the position or number of terms



### Summing Arithmetic Sequences

Flashcards

- $U_1$  is the first term of the sequence
- $d$  is the common difference from one term to the next
- $U_n$  is the  $n^{\text{th}}$  term of the sequence (last in the case of a sum)

$$S_n = \frac{n}{2} (U_1 + U_n) \quad S_n = \frac{n}{2} (2U_1 + d(n-1))$$

Good if I know the number of terms and the first and last terms

Good if I know the number of terms and the first term and the common difference

## Exam Style Questions

Complete these questions on paper and then check your solutions against the video solutions on the website.

### Question 1

An Uncle deposits \$50 into his nephew's savings account on his first birthday. On his second birthday he deposits \$100, \$150 on his third birthday and so on.

- (a) How much money would he deposit on his 18<sup>th</sup> birthday?
- (b) How much would he have deposited in total after his 18<sup>th</sup> Birthday?

Answers

(a) \_\_\_\_\_

(b) \_\_\_\_\_

**(6marks)**



## Question 2

Create the question as it should appear here

The first 5 terms of an arithmetic sequence are shown below

2, 5, 8, 11, 14

- (c) Write down the 6<sup>th</sup> number in the sequence
- (d) Calculate the 130<sup>th</sup> term in the sequence
- (e) Calculate the sum of the first 80 terms of the sequence

Answers

(c) \_\_\_\_\_

(d) \_\_\_\_\_

(e) \_\_\_\_\_

**(6marks)**

