Week 5
Term 3

Learning Brief

SMM2: Sequences, exponentials and calculus.

Goals

This topic
- General sequences and number patterns
- Arithmetic sequences
- Geometric sequences

This week
- Defining sequences
- Recursive formula
- Defining an arithmetic sequence
- Term and sum of an arithmetic sequence

Theoretical Components

Read the following websites and make notes:

http://www.mathsisfun.com/algebra/sequences-series.html

http://hotmath.com/hotmath_help/topics/arithmetic-sequences.html

Arithmetic sequence

$$T_n = a\,(n-1)d$$

$$S_n = \frac{n}{2}(2a + (n-1)d)$$

$$T_n - T_{n-1} = d, for\ n \geq 2$$

Knowledge Checklist
- What is a sequence
- The three ways of defining a sequence
- Using a recursive formula
- Defining an arithmetic sequence
- Finding the term of an arithmetic sequence
- Finding the sum of an arithmetic sequence

Practical Components

See Mathspace Tasks

1. Arithmetic progressions
2. Recurrence relationships for AP's
3. Terms in Arithmetic Progressions
4. Arithmetic Series

Further practice:
From *Cambridge* Chap 6
Ex 6C Any (or all) of Q1 to Q5, Q6 a) e) h)
Ex 6D Q1 to Q7, Q9, Q11 a)
Ex 6G Q1 every second question, Q2 ditto, Q3 a) b), Q4
Look at the definition of series on P214
6I Anything out of Q1 to Q7 (make sure you do Q7) Q8 a) c) e), Q11 a) b) c), Q13 a) e) g), Q15 a)

Investigation

On HawkerMaths tba

QFO

Quiz/Forum/Other

None this week.