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**MATHEMATICS  
Methods Units 1 & 2**

**Test 6 – Exponentials and Sequences**

**Semester 1 2019**

**Section One - Calculator Free**

Time allowed for this section

Working time for this section: 25 minutes

Marks available: 25 marks

## Material required/recommended for this section

##### To be provided by the supervisor

This Question/Answer booklet

Formula sheet

##### To be provided by the students

Standard items: pens, pencils, pencil sharpener, eraser, correction fluid, ruler, highlighters

Special items: Nil

## Important note to students

No other items may be used in this section of the assessment. It is **your** responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the assessment room. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

1. (2 marks)  
   Simplify , leaving your answer with positive indices.
2. (5 marks: 2, 3)  
   Simplify each of the following.
3. (7 marks: 2, 5)  
   Solve for I
4. (3 marks)

The sum to infinity of a geometric sequence with first term 10 is 40. Find the recursive rule of this sequence.

1. (8 marks: 3, 2, 3)

The sum of the first *n* terms of an arithmetic progression is given by . Find:

* 1. The first three terms of the sequence.
  2. The recursive rule of the sequence.
  3. The sum of all the terms between the 5th term and the 17th term inclusive.

**End of Section One**