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**MATHEMATICS  
Methods Units 1 & 2**

**Test 6 – Exponentials and Recursion**

**Semester 2 2020**

**Section One - Calculator Free**

Time allowed for this section

Working time for this section: 25 minutes

Marks available: 23 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. (4 marks)  
   Graph on the axes below.

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1. (6 marks: 2, 4)  
   Solve for t
2. (3 marks)

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

1. (10 marks: 3, 2, 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. Term 20
  4. The sum of all the terms between the 5th term and the 17th term inclusive.

**End of Section One**