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**MATHEMATICS  
Methods Units 1 & 2**

**Test 1 – Relationships, Functions, Linear and Quadratic Functions**

**Semester 1 2020**

**Section One - Calculator Free**

Time allowed for this section

Working time for this section: 20 minutes

Marks available: 20 marks

## Material required/recommended for this section

##### To be provided by the supervisor

This Question/Answer booklet

Formula sheet

##### To be provided by the candidate

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

Special items: Nil

## Important note to candidates

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

1. (4 marks)  
   The midpoint of and is . Find *a* and *b*.
2. (6 marks: 2,2,2)  
   Suggest **one** possible equation **each** for the lines and if:
3. and are parallel to . [3]
4. and meet at the point with coordinates and are perpendicular

to each other. [3]

1. and do not intersect. [2]
2. (4 marks)  
   A parabola has equation whereand are constants with . Find and if the parabola has an *x*-intercept at , a turning point at and a *y*-intercept at .
3. (6 marks: 2,1,1,2)

Consider the function . Determine

* 1. the coordinates of the turning point and its nature. [2]
  2. the equation of the line of symmetry. [1]
  3. the coordinates of the y-intercept. [1]
  4. the value of b given that the function passes through [2]

**End of Section One**