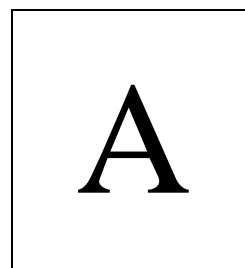


St. Paul's College  
**F.4 Mid-year Examination 2019-2020**

**MATHEMATICS Compulsory Part**  
**PAPER 1 Section A**  
**Question-Answer Book**



**Time Allowed: 1 hour 15 minutes**

Name				
Class				
Class No.				
Group	Group 1 KWN	Group 2 FN	Group 3 WHP	Group 4 TH
	Group 5 FBL	Group 6 PSK	Group 7 HL	

**INSTRUCTIONS**

1. Attempt ALL questions.
2. Answer this section in the spaces provided in this Question-Answer Book.
3. Unless otherwise specified, all working must be clearly shown.
4. Marks will be deducted for poor and untidy presentation.
5. Unless otherwise specified, numerical answers should be either exact or correct to 3 significant figures.
6. The diagrams in this paper are not necessarily drawn to scale.

Question No.	1	2	3	4	5	6	7	8	9	Total
Marks										/40





5. Let  $f(x) = 3x^2 - 2x + 1$ .

(a) Find  $f(-4) - f(5)$ .

(b) Someone claims that  $f(x) = 0$  has no real roots.

Do you agree? Explain your answer.

(4 marks)

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6. Let  $f(x) = (2x + 1)^2 - 3$ .

(a) Write down

(i) the coordinates of the vertex, and

(ii) the y- intercept

of the graph of  $y = f(x)$ .

(b) A student claims that  $y = g(x) = -(x - 2)^2 - 3$  has the same maximum value as  $y = f(x)$ . Do you agree? Explain your answer.

(4 marks)

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