**SACRED HEART GIRLS’ COLLEGE**

**OAKLEIGH**



**Mathematical Methods CAS 2014**

**Unit 3 SAC 1: TEST**

**Part A**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Teacher (please circle)**: Ms Gates Mr Smith Ms Garkel

**No CAS and no summary notes permitted**

**Part A: 3 short answer questions**

**Writing Time: 20 minutes**

**Marks: 15**

**SHORT ANSWER QUESTIONS**

**Instructions:**

Answer **all** questions in the spaces provided.

In all questions where a numerical answer is required an exact value must be given unless otherwise specified.

In questions where more than one mark is available, appropriate working **must** be shown.

Unless otherwise indicated, the diagrams in this test are **not** drawn to scale.

**Question 1** (7 marks)

Consider the function , where is the maximal domain of

1. Find . 1 mark
2. Describe the transformations which when applied to the graph of , produce the graph of . 2 marks
3. Find the rule for , the inverse of . 2 marks
4. Show that the values of for which and hence the values of

for which are . 2 marks

**Question 2** (4 marks)

For and

1. Find the rule for . 1 mark
2. Write the rule for as a hybrid function and state the domain. 3 marks

**Question 3** (4 marks)

1. For the function , write the function in the form . 2 marks
2. Hence, find if . 2 marks

**END OF QUESTION AND ANSWER BOOKLET**