KILLARA HIGH SCHOOL

Year 12 Term 2 Assessment 2008

Extension 2 Mathematics

Time Allowed: 60 minutes

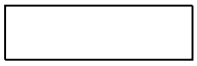
Total marks: 57

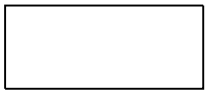
Instructions

1. Start each question in a new booklet.
2. Write on one side of the paper only.
3. Show all necessary working.

Question 1

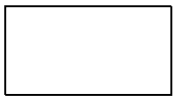
a. Evaluate

i)  2 marks

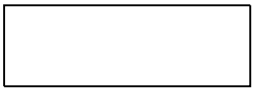
ii)  2 marks

iii)  3 mark

b. Find  to 3 significant figures. 3 marks

c. Use integration by parts to evaluate  5 marks

Question 2

a. Evaluate  5 marks

b. Evaluate  5 marks

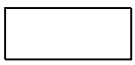
Question 3

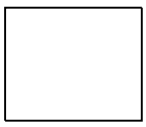
a. Evaluate  4 marks

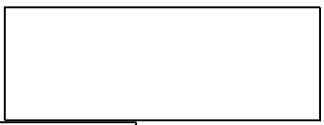
b. Evaluate  4 marks

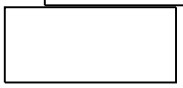
Question 4

a. Calculate  3 marks

b. Evaluate  by using the substitution  4 marks

c. Let =  where  is a non-negative integer.

i) Show that  =  when  3 marks

ii) Deduce that  when  3 marks

iii) Evaluate  2 marks

Question 5

a. Evaluate $\int \frac{}{}$ by using the substitution $t = \tan(\frac{}{})$ 5 marks

b. Evaluate $\int \frac{}{}$ 4 marks

THE END

1