



UNIT PEPERIKSAAN
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SPM 2012 TRIAL EXAMINATION
ADDITIONAL MATHEMATICS
Paper 2
September

3472 / 2

$2\frac{1}{2}$ hrs (Two hours and 30 minutes)

PLEASE DO NOT OPEN THIS QUESTION PAPER UNTIL YOU ARE TOLD

Name :

Form :

1. *This paper consists of three sections.*
2. *Answer all questions from Section A, four questions from section B and two questions from Section C.*
3. *Answer on the paper provided. Show your working clearly.*
4. *The diagrams in the questions are not drawn to scale unless stated.*
6. *The marks allocated for each question and sub-part of a question are shown in brackets.*
7. *A four figure mathematical tables booklet is provided.*
8. *You may use a non-programmable scientific calculator.*

Name of Examiner			
Section	Question	Full Marks	Marks Obtained
A	1	5	
	2	7	
	3	8	
	4	6	
	5	7	
	6	7	
B	7	10	
	8	10	
	9	10	
	10	10	
	11	10	
C	12	10	
	13	10	
	14	10	
	15	10	
Total			

This paper consists of 12 printed pages including this page.

List Of Mathematics Formulae

The following formulae may be helpful in answering the questions. The symbols given are the ones commonly used.

ALGEBRA

$$1 \quad x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$2 \quad a^m \times a^n = a^{m+n}$$

$$3 \quad a^m \div a^n = a^{m-n}$$

$$4 \quad (a^m)^n = a^{mn}$$

$$5 \quad \log_a mn = \log_a m + \log_a n$$

$$6 \quad \log_a \frac{m}{n} = \log_a m - \log_a n$$

$$7 \quad \log_a m^n = n \log_a m$$

$$8 \quad \log_a b = \frac{\log_c b}{\log_c a}$$

$$9 \quad T_n = a + (n-1)d$$

$$10 \quad S_n = \frac{n}{2} \{2a + (n-1)d\}$$

$$11 \quad T_n = ar^{n-1}$$

12

$$S_n = \frac{a(r^n - 1)}{r - 1} = \frac{a(1 - r^n)}{1 - r}, \quad (r \neq 1)$$

$$13 \quad S_\infty = \frac{a}{1 - r}, \quad |r| < 1$$

CALCULUS

$$1 \quad y = uv, \quad \frac{dy}{dx} = u \frac{dv}{dx} + v \frac{du}{dx}$$

$$2 \quad y = \frac{u}{v}, \quad \frac{dy}{dx} = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$$

$$3 \quad \frac{dy}{dx} = \frac{dy}{du} \times \frac{du}{dx}$$

$$4 \quad \text{Area under the curve} = \int_a^b y dx \quad \text{or} \quad = \int_a^b x dy$$

$$5 \quad \text{Volume generated} = \int_a^b \pi y^2 dx \quad \text{or} \quad = \int_a^b \pi x^2 dy$$

GEOMETRY

$$1 \quad \text{Distance} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

$$2 \quad \text{Midpoint} = (x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$3 \quad \text{A point dividing a segment of a line} = \\ (x, y) = \left(\frac{nx_1 + mx_2}{m+n}, \frac{ny_1 + my_2}{m+n} \right)$$

$$4 \quad \text{Area of a triangle} = \\ \frac{1}{2} [(x_1 y_2 + x_2 y_3 + x_3 y_1) - (x_2 y_1 + x_3 y_2 + x_1 y_3)]$$

$$5 \quad |r| = \sqrt{x^2 + y^2}$$

$$6 \quad \hat{r} = \frac{xi + yj}{\sqrt{x^2 + y^2}}$$