

MOCK EXAM 3
MATHEMATICS Compulsory Part
PAPER 1
Question-Answer Book

Name: _____

(2 $\frac{1}{4}$ hours)

This paper must be answered in English

INSTRUCTIONS

1. Write your name in the space provided on Page 1.
2. This paper consists of **THREE** sections, A(1), A(2), and B.
3. Attempt **ALL** questions in this paper. Write your answers in the spaces provided in this Question-Answer Book. Do not write in the margins. Answers written in the margins will not be marked.
4. Graph paper and supplementary answer sheets will be supplied on request. Write your name on the graph paper and supplementary answer sheets.
5. Unless otherwise specified, all working must be clearly shown.
6. Unless otherwise specified, numerical answers should be either exact or correct to 3 significant figures.
7. The diagrams in this paper are not necessarily drawn to scale.

SECTION A(1) (35 marks)

1. Simplify $\frac{x^2y^5}{(x^{-3}y^2)^3}$ and express your answer with positive indices. (3 marks)

2. Factorize

(a) $x^2 + 5x - 6$,

(b) $x^4 + 5x^3 - 6x^2$

(3 marks)

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

3. The table below shows the distribution of the numbers of children in some families.

Number of children	0	1	2	3	4
Number of families	5	20	17	6	2

Find the median, the mode and the standard deviation of the above distribution. (3 marks)

4. Consider the formula $3(x - 2y) = 6x - 4$.

- (a) Make y the subject of the above formula.
- (b) If the value of x is increased by 4, write down the change in the value of y . (4 marks)

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

5. The price of 5 rulers and 6 pens is \$73 while the price of 7 rulers and 9 pens is \$107. Find the price of a pen. (4 marks)

6. In a polar coordinate system, O is the pole. The polar coordinates of A , B and C are $(16, 59^\circ)$, $(12, 239^\circ)$ and $(11, 329^\circ)$ respectively.

(a) Describe the geometric relationship between OC and AB .

(b) Find the area of $\triangle ABC$.

(4 marks)

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.



Answers written in the margins will not be marked.

- Answers written in the margins will not be marked.

-

Find

- Answers written in the margins will not be marked.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. A faint, diagonal watermark reading "DMA Tutorial" is visible across the center of the page.

<https://www.brightmind.com.hk> 5500 1376

Answers written in the margins will not be marked.

- (2 marks)

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. A faint, diagonal watermark reading "DMA Tutoria" is visible across the center of the page.

<https://www.brightmind.com.hk> 5500 1376

Answers written in the margins will not be marked.

- Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

- Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

-
- This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. A faint, diagonal watermark reading "DM Tutorial Center" is visible across the middle of the page.

<https://www.brightmind.com.hk>  5500 1376

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

(a) Find $f(2)$. (4 marks)

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. A faint, diagonal watermark reading "BM Tutorial Centre" is visible across the center of the page.

Answers written in the margins will not be marked.

<https://www.brightmind.com.hk> 5500 1376

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

- Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

- Answers written in the margins will not be marked.

- Answers written in the margins will not be marked.

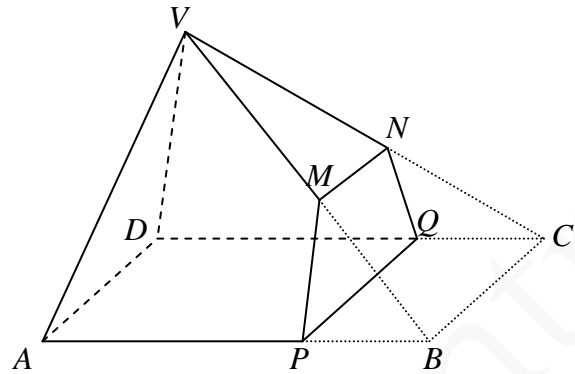


Figure 3(b)

-
- This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. A faint, diagonal watermark reading "BM Tutor" is visible across the center of the page. There are no margins or other markings present.

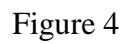
<https://www.brightmind.com.hk> 5500 1376

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

- Answers written in the margins will not be marked.



- [illegible]

<https://www.brightmind.com.hk> 5500 1376

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked

-
- This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is a faint, diagonal watermark in the background that reads "DRAFT". The paper appears to be a standard sheet of lined notebook paper.

<https://www.brightmind.com.hk>  5500 1376

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

END OF PAPER

Answers written in the margins will not be marked.