

MOCK EXAM 6
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.

5. The ratio of the weight of a desk to that of a chair is 12 : 5. The total weight of 5 desks and 7 chairs is 57 kg. Find the weight of a desk. (4 marks)

6. The marked price of a toy is higher than its cost by \$50. The toy is sold at a discount of 40% on its marked price. After selling the toy, the percentage loss is 20%. Find the cost of the toy. (4 marks)

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7. Figure 1 shows an ice-cream in the shape of a hemisphere of radius r cm put on a right circular cone of height 16 cm and base radius r cm. It is given that the volume of the right circular cone is twice the volume of the ice-cream.

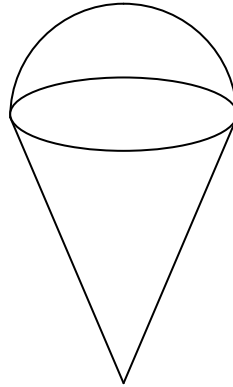


Figure 1

- (a) Find r .
- (b) Find the volume of the ice-cream in terms of π . (4 marks)

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12. The table below shows the distribution of the numbers of books read by a group of students in a summer holiday

Number of books	1	2	3	4	5	6
Number of students	6	4	4	12	8	2

- (a) Find the mean of the distribution. (2 marks)
- (b) Are the median and the mode of the distribution equal? Explain your answer. (2 marks)
- (c) If n more students join the group and each of them reads 1 book, write down
 - (i) the value of n such that the mean of the distribution is decreased by 1;
 - (ii) the least value of n such that the median of the distribution is decreased by 2;
 - (iii) the greatest value of n such that the mode of the distribution remains unchanged. (3 marks)

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13. In Figure 3, $\triangle ABC$ and $\triangle CDE$ are equilateral triangles. $AB = 15$ cm, $CD = 12$ cm and $AD = 9$ cm.

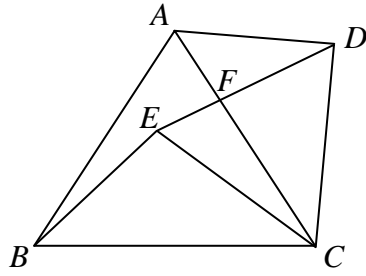


Figure 3

- (a) Prove that $\triangle EBC \cong \triangle DAC$. (2 marks)
- (b) Is $\triangle EBC$ a right-angled triangle? Explain your answer. (2 marks)
- (c) Find the area of $ABCD$. (3 marks)

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END OF PAPER

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