

**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.



3. Set A has 4 cards numbered 2, 3, 5 and 7 respectively while Set B has 6 cards numbered 2, 3, 4, 6, 8 and 9 respectively. One card is randomly drawn from each set of the cards. Find the probability that the sum of the two numbers is larger than 10. (3 marks)

---

---

---

---

---

---

---

---

---

---

4. Factorize  
 (a)  $m^3 - 2m^2n + m^2$ ,  
 (b)  $m^3 - 2m^2n + m^2 - 4m + 8n - 4$ . (4 marks)

---

---

---

---

---

---

---

---

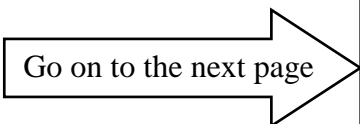
---

---

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.



Page total
------------

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

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 ring is \$780. It is given that the marked price of the ring is 30% higher than the cost.
- (a) Find the cost of the ring.
- (b) If the ring is sold at \$720, find the percentage profit. (4 marks)

---

---

---

---

---

---

---

---

---

---

Answers written in the margins will not be marked.

Page total

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.

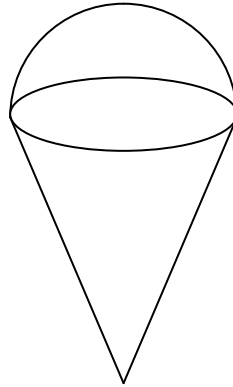


Figure 1

- (a) Find  $r$ .
- (b) Find the volume of the ice-cream in terms of  $\pi$ . (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.

Go on to the next page

Page total













Answers written in the margins will not be marked.

Large rectangular area with horizontal lines for writing answers.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Go on to the next page Page total

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

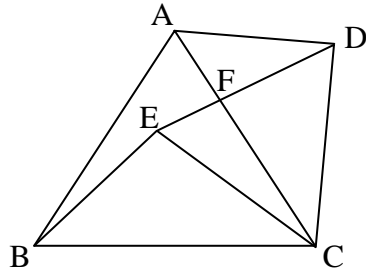


Figure 3

- (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)

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

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.

Page total

Answers written in the margins will not be marked.

A large rectangular area with horizontal lines for writing answers. The lines are evenly spaced and cover most of the page. A faint watermark 'BMZ Tutorial Centre' is visible across the center of this area.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Go on to the next page Page total



Answers written in the margins will not be marked.

A large rectangular area with horizontal lines for writing answers. The lines are evenly spaced and cover most of the page. A faint watermark 'BMZ Tutorial Centre' is visible diagonally across the page.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Go on to the next page Page total









Answers written in the margins will not be marked.

A large rectangular area with horizontal lines for writing answers. The lines are evenly spaced and cover most of the page. A faint watermark 'BMZ Tutorial Centre' is visible across the middle of this area.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Go on to the next page Page total



Answers written in the margins will not be marked.

A large rectangular area with horizontal lines for writing answers. The lines are evenly spaced and cover most of the page. A faint watermark 'BMZ Tutorial Centre' is visible across the middle of this area.

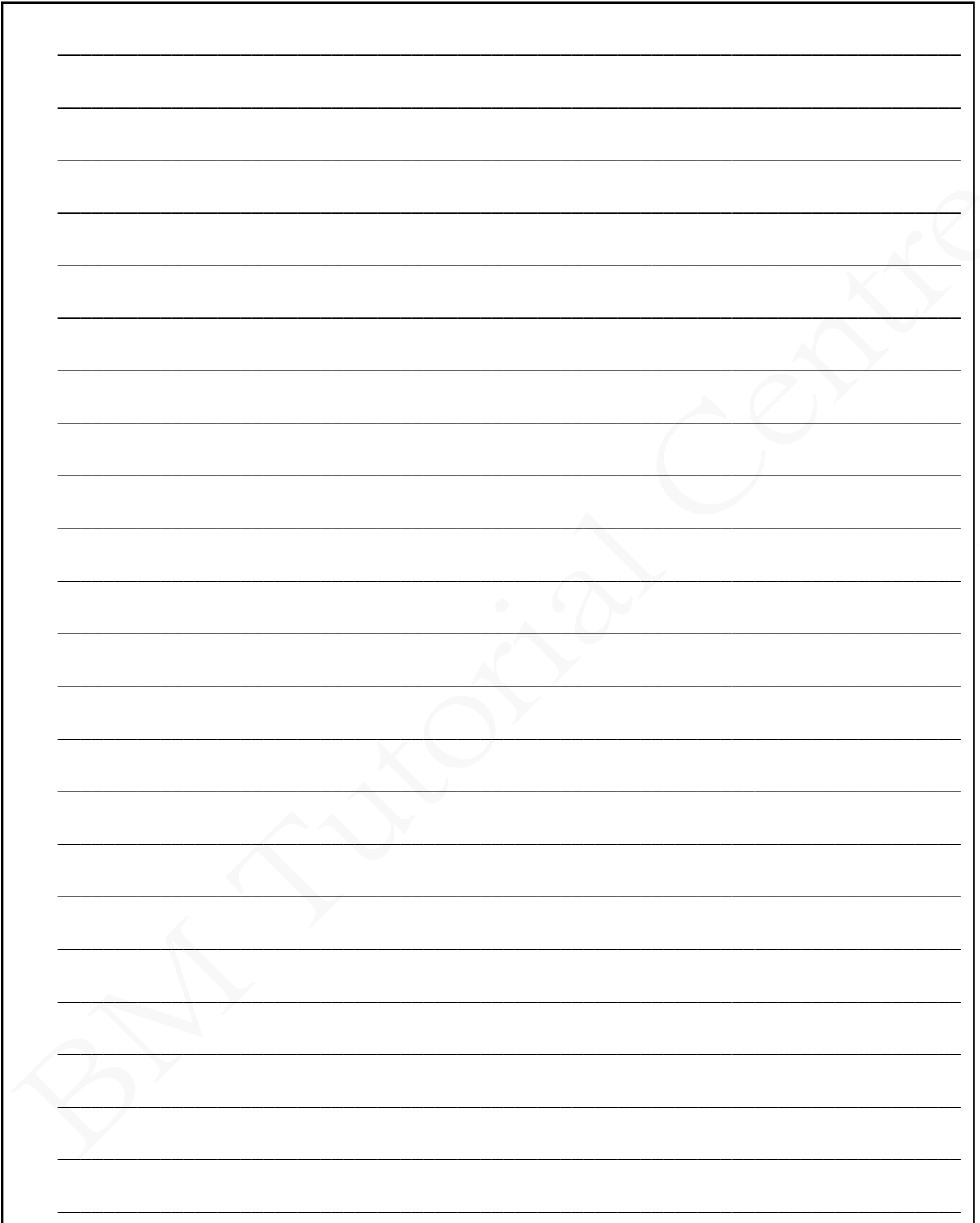
Answers written in the margins will not be marked.

Answers written in the margins will not be marked.

Go on to the next page Page total

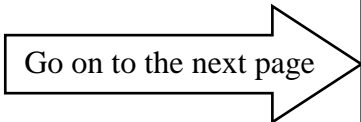


Answers written in the margins will not be marked.

A large rectangular area with horizontal lines for writing answers. The lines are evenly spaced and cover most of the page's width. A faint watermark 'BMZ Tutorial Centre' is visible across the middle of this area.

Answers written in the margins will not be marked.

Answers written in the margins will not be marked.



Page total
------------

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.

Page total