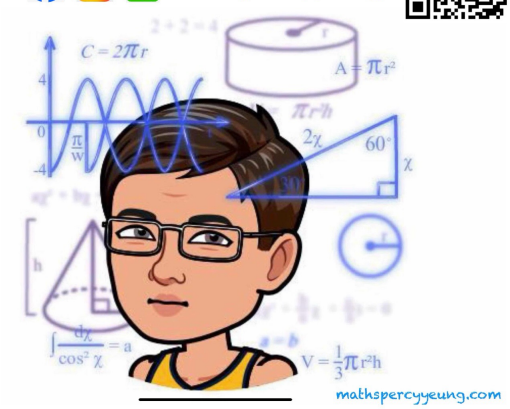
2024-2025 S1
2nd TERM UT1
MATH



2024 – 2025
S1 Second Term Uniform Test 1

MATHEMATICS

Question–Answer Book

21st March, 2025
8:15 am – 9:15 am (1 hour)

This paper must be answered in English

INSTRUCTIONS

1. Write your name, class and class number in the spaces provided on this cover.

2. Attempt ALL questions in this paper. Write your answers in the spaces provided in this Question – Answer Book.

3. Unless otherwise specified, all working must be clearly shown.

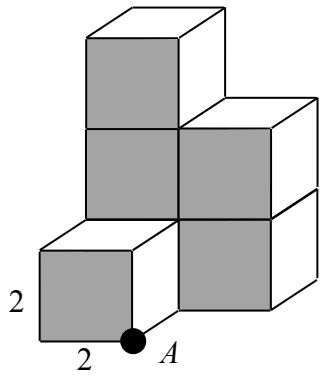
4. The diagrams in this paper are not necessarily drawn to scale.

5. NO calculator is allowed.

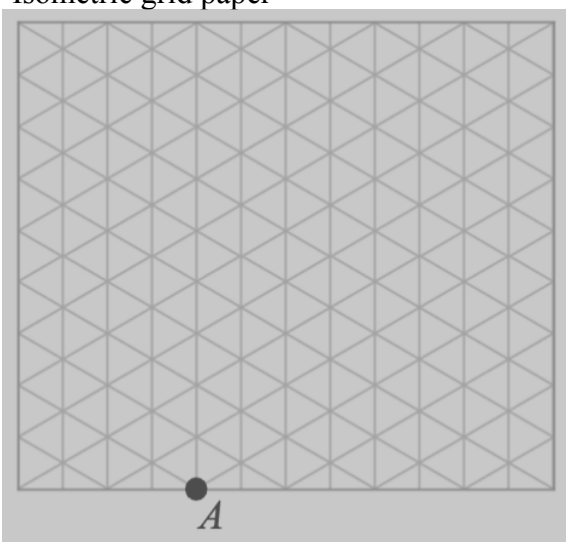
Sections	Marks
A Total	**/50**
B Total	**/20**
TOTAL	**/70**

Section A (50 marks)

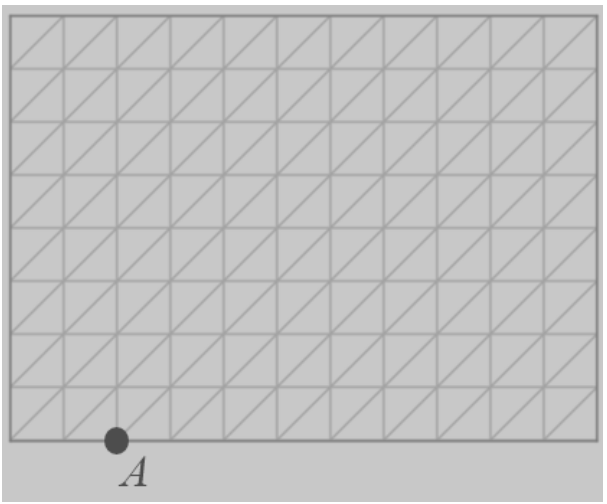
1. The solid shown on the right is formed by cubes with sides 2 units. Treat A as the lowest point of the solid and treat the shaded surface as the front surface on the oblique grid. Draw the 2-D representations of the solid on isometric grid paper and oblique grid paper respectively. (6 marks)



Isometric grid paper



Oblique grid paper

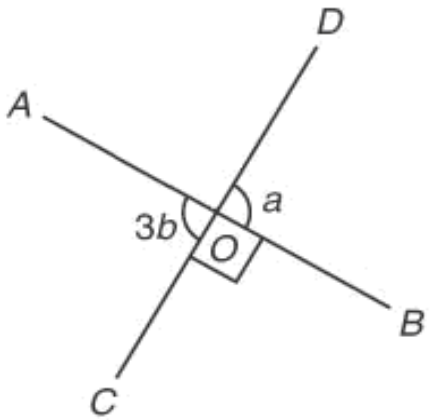


2. A shirt marked at \$600 is sold at 30% off.
   (a) Find the selling price of the shirt.
   (b) If the profit per cent is 5%, find the cost price of the shirt.

(4 marks)

3. The number of workers in Company A is 40% more than that of Company B while the number of workers in Company C is 20% less than that of Company A. If the number of workers in Company C is 1 456, find the number of workers in Company B. (3 marks)

4. In the figure, *AOB* and *COD* are straight lines. Find *a* and *b*. (4 marks)



5. Solve the following equations.

(a) $5a - 4 = 36 - 15a$

(b) $\dfrac{7 - 5b}{3} = 3b$

(c) $\dfrac{3c}{4} = \dfrac{c + 2}{6}$

(9 marks)

6. Simplify the following algebraic expressions.

(a) $8a - a \times 4$

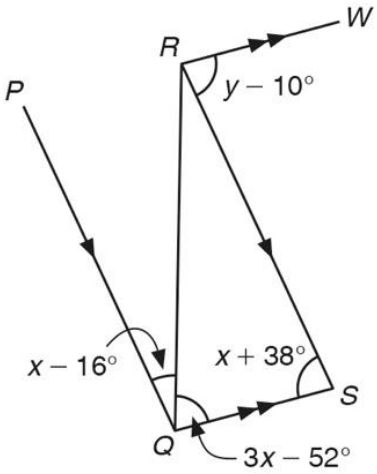
(b) $w \times (-w) \times w \times 3 + 2w \times 3w$

(c) $\dfrac{2q^4 \times (-q^8)}{8q^{13}}$

(9 marks)

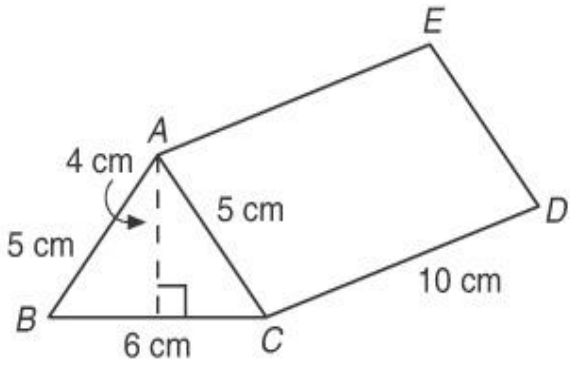
7. The daily entry fee ($\$F$) collected by a theme park can be calculated by the formula $F = 280x + 550y$, where x and y are the daily numbers of children and adults visited to the park respectively. Find the daily entry fee collected if 130 children and 150 adults visit the theme park on a day. (3 marks)

8. In the figure, PQ // RS and QS // RW. Find x and y. (6 marks)



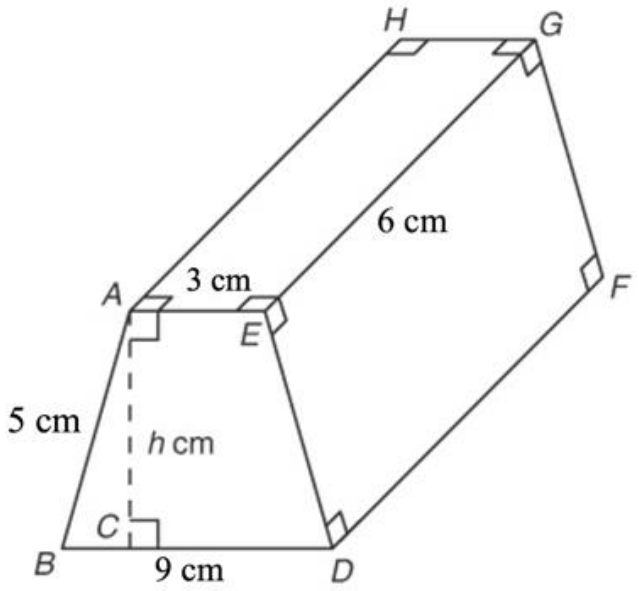
9. In the figure,
   (a) find the volume of the prism.
   (b) find the total surface area of the prism.

(6 marks)



Section B (20 marks)

10. The figure shows a prism with a trapezoidal base where $AB = ED$.



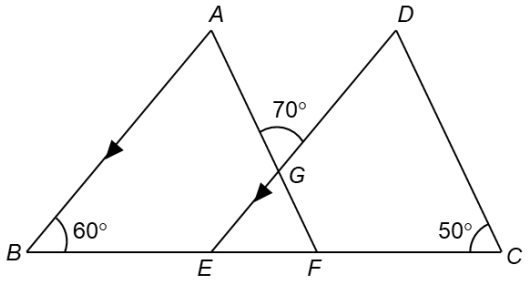
(a) Find the volume of the prism in terms of h. (2 marks)

(b) If the volume of the prism is 144 cm^3, find the value of h. (2 marks)

(c) Find the total surface area of the prism. (2 marks)

(d) If the prism is melted and recast into n identical cuboids with length 3 cm, width 2 cm and height 6 cm, find the percentage change of the total surface area. (5 marks)

11. In the figure, AGF, DGE and $BEFC$ are straight lines. Given that AB // DE.



(a) Find $\angle GFE$. (3 marks)

(b) Is AF parallel to DC? Explain your answer. (1 mark)

(c) Prove that the sum of interior angles of quadrilateral $CDGF$ is 360°. (5 marks)

END OF PAPER