Name: _____

Class: _____

Exam Number:				

MID YEAR EXAMINATION

2023 – 2024

QUESTION-ANSWER BOOK

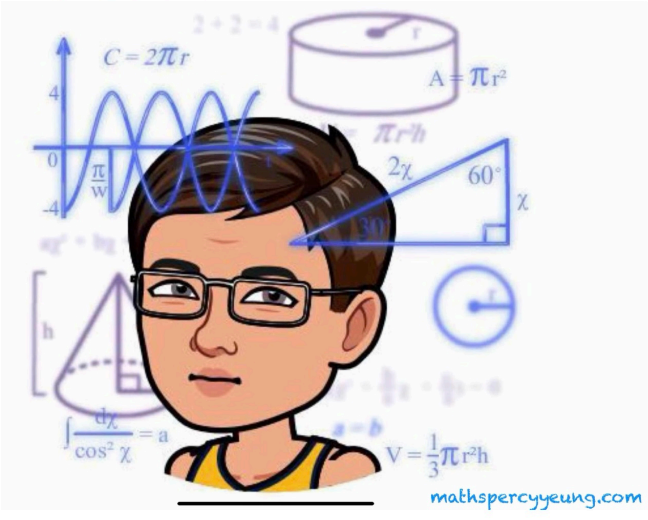
Subject: **SECONDARY 1 MATHEMATICS**

Paper: **II**

Time Allowed: **1 HOUR**

Total Marks: **100**

No. of pages: 10



INSTRUCTIONS:

(1) Write your name, class and examination number in the spaces provided.

(2) This paper consists of Two Sections, A and B.

(3) Attempt ALL questions in Sections A and B. Write your answers in the spaces provided in this Question-Answer Book. Do not write in the margins.

(4) The use of HKEAA approved calculators is allowed.

(5) Unless otherwise specified, all working must be clearly shown.

(6) The diagrams in this paper are not necessarily drawn to scale.

Section A: (60 marks) Working steps must be shown in answering questions in this section.

1. Express each of the following word sentences in an algebraic expression. (8 marks)

(a) Add 5 to the square of x.

(b) a minus the quotient of dividing b by 3.

(c) Subtract 7 from the product of 6 and b.

(d) Multiply p by the sum of 5 and h.

2. Simplify the following expressions. (8 marks)

(a) $2m \times 3 - m$

(b) $7y \div 7 + 2y$

(c) $w \times (-w) \times w \times 3$

(d) $(-b) \times (-b) \times (-b) \times (-b)$

3. Given the formula $G = a(2b - 5)$, find the value of G in each of the following cases. (4 marks)

(a) $a = -2, b = 3$

(b) $a = -5, b = 5$

Answers written in the margins will not be marked.

4. Solve the following equations. (9 marks)

(a) $-7w+18=4$

(b) $\frac{S}{3}+4=11$

(c) $7b-27=4b$

5. Solve equation $6(4+b)=4b-6$ by removing the bracket. (4 marks)

Answers written in the margins will not be marked.

6. Solve the following equations by eliminating the denominator. (7 marks)

(a) $3y = \frac{5+y}{2}$

(b) $\frac{6+f}{4} = \frac{f}{8}$

7. To construct a triangle with the sides 3 cm, 4 cm and 5 cm, which drawing tool(s) will be needed? **Circle** the drawing tool(s) which is needed. (2 marks)

Ruler Set Squares A pair of compasses Protractor

8. In the box below, use a pair of compasses, construct a circle with centre O and radius 2 cm. (3 marks)

x O

Answers written in the margins will not be marked.

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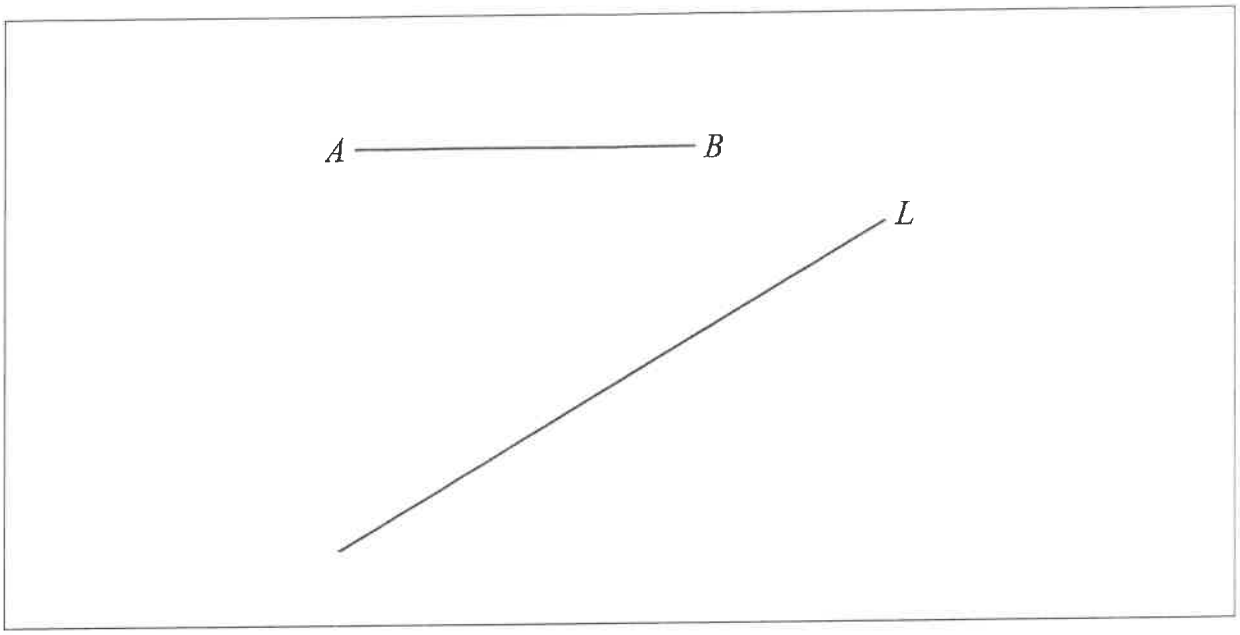
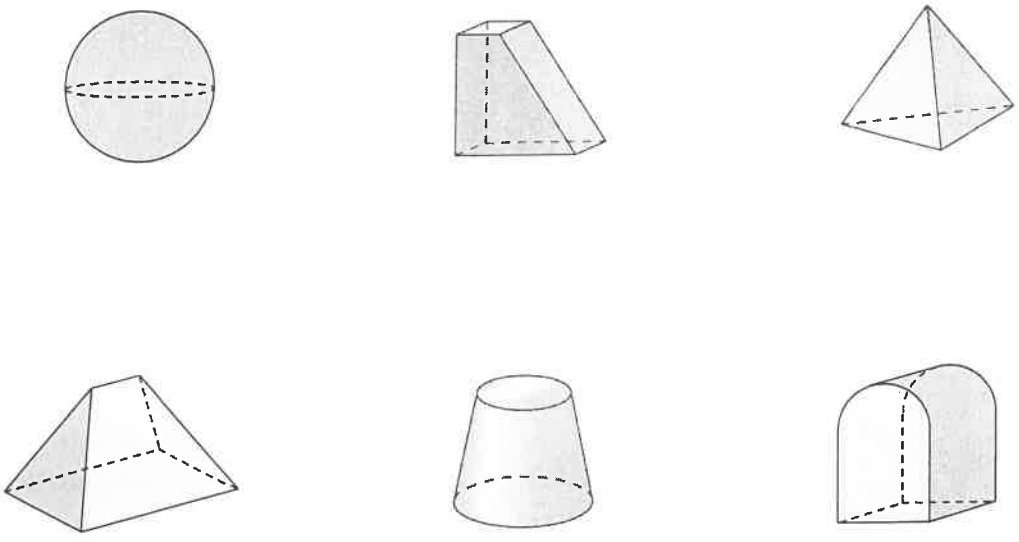
9. In the box below, use a pair of compasses, copy the line segment AB on the line L and mark the line segment as CD. (4 marks)



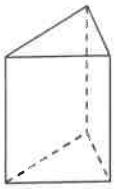
10. In following solids, **circle** the polyhedron(s). (3 marks)



Answers written in the margins will not be marked.

11. Write down the numbers of vertices, edges and faces for each of the following polyhedrons. (6 marks)

(a)

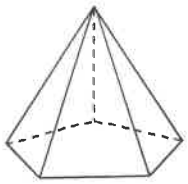


Vertices = _____

Edges = _____

Faces = _____

(b)

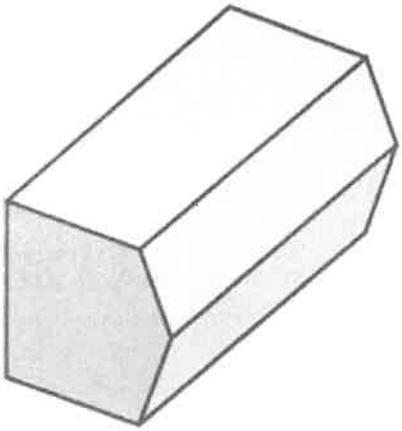


Vertices = _____

Edges = _____

Faces = _____

12. In the box below, sketch the uniform cross-section of the given solid. (2 marks)



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Section B: (40 marks) Working steps must be shown in answering questions in this section.

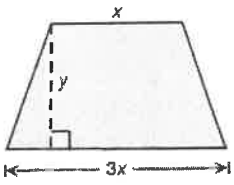
1. Simplify the following expressions. (6 marks)

   (a) $a + 8a \div 2 - 3a + 2$

   (b) $b(4b - 2b)(b - 2b) - b + 3b^3$

2. Consider the formula $T = x^2 - 4xy$. If $x = -5$ and $y = 0.2$, find the value of T by the method of substitution. (2 marks)

3. The figure shows a trapezium.



   (a) Write down the formula for calculating the area A of the trapezium. (2 marks)

   (b) Find the area of the trapezium if $x = 5$ and $y = 4$. (2 marks)

Answers written in the margins will not be marked.

4. Solve the equation $\frac{x-4}{5}-(x-3)=1$. (4 marks)

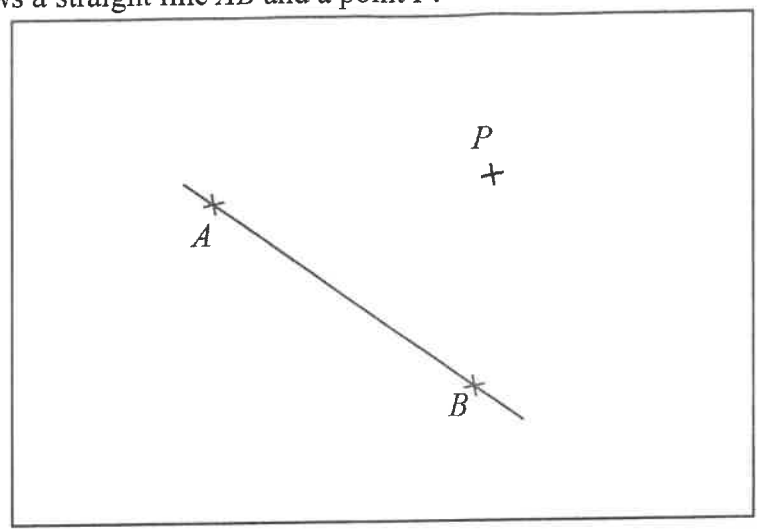
5. In a MC test, there are 10 questions. 2 marks will be awarded for each correct answer and -1 will be scored for each incorrect answer or missing question. May gets x correct answers in the test.

(a) Express and simplify, in terms of x, the test score of May. (4 marks)

(b) Can May score 16 marks in the test? Using the result of (a), explain your answer. (4 marks)

Answers written in the margins will not be marked.

6. The figure shows a straight line AB and a point P.



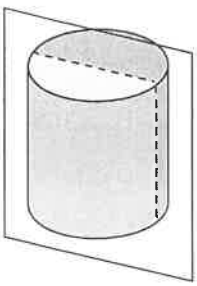
Using a ruler and a set square, construct

(a) the line L_1 passing through point P and parallel to AB, (2 marks)

(b) the line L_2 passing through point P and perpendicular to AB. (2 marks)

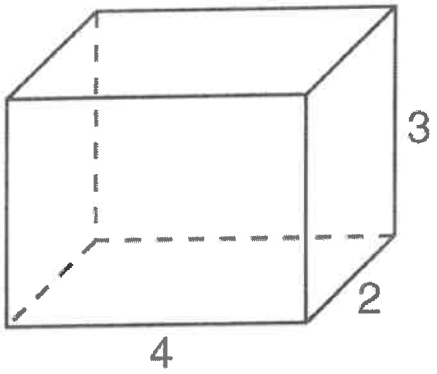
7. In the box below, construct $\triangle XYZ$ with $XY = 5$ cm, $\angle X = 70°$ and $\angle Y = 40°$. (4 marks)

8. In the box below, sketch the cross-section obtained when the right circular cylinder is cut at the dotted line along the given plane. (2 marks)

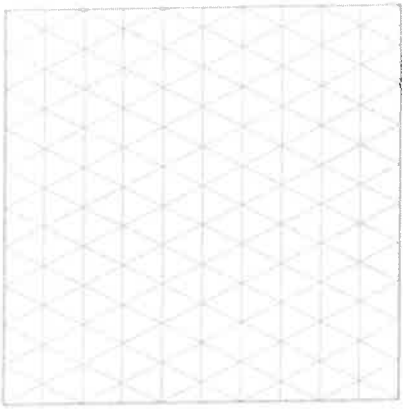


Answers written in the margins will not be marked.

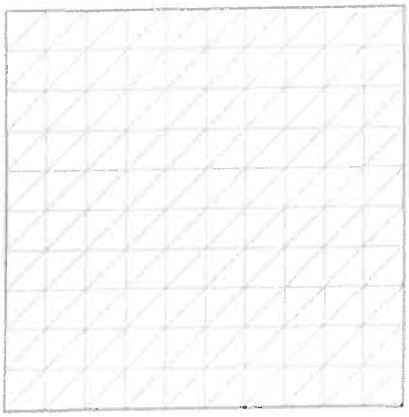
9. Draw the 2-D representations of the given right prisms on isometric grid paper and oblique grid paper respectively. (6 marks)



Isometric grid paper



Oblique grid paper



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Answers written in the margins will not be marked.

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