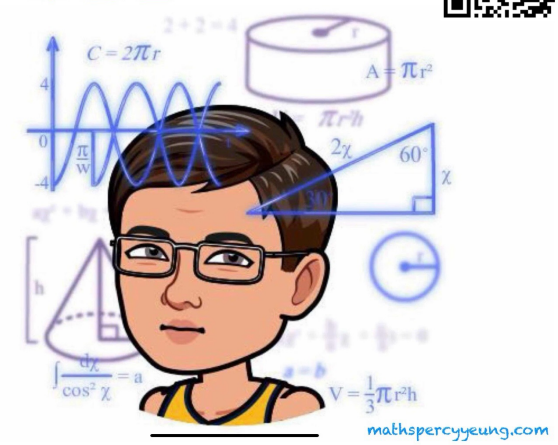


FINAL EXAMINATION
2024 – 2025
QUESTION-ANSWER BOOK

Subject: **Secondary 1 Mathematics**

Paper: **II**

Time Allowed: **1 hour**

Total Marks: **100**

No. of pages: **11**

Page	Marks	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
Total		

INSTRUCTIONS

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

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

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

(4) Unless otherwise specified, the use of HKEAA approved electronic calculators is allowed.

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

(6) Unless otherwise specified, numerical answers should be exact or correct to 3 significant figures.

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

Section A (70 marks): Working steps must be shown in answering questions in this section.

1. Simplify the following expressions. (7 marks)

(a) $a^3 \times a^5$

(b) $h^{12} \div h^6$

(c) $3w^7 \times 4w^2 \div (-6w^3)$

2. Simplify the following expressions. (7 marks)

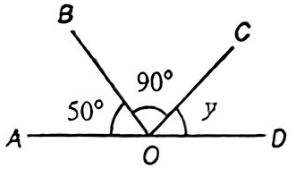
(a) $(x+5)+(x+6)$

(b) $6m-4+2n-2m+n-8$

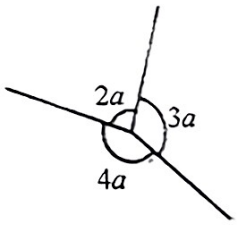
(c) $(4-x)(5x+2)$

3. Find the value of the polynomial $p^2 - 2p - 3$ if $p = 2$. (2 marks)

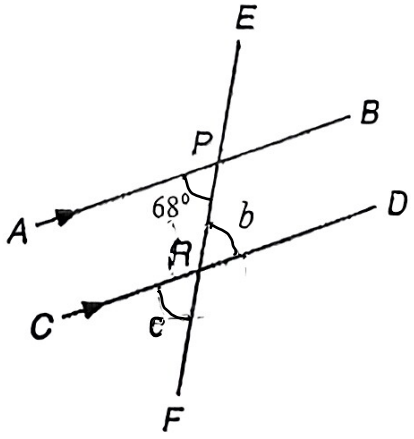
4. In the figure, AOD is a straight line. Find y. (3 marks)



5. Find the value of a in the following figure.



6. In the figure, $AB // CD$ and $EPRF$ is a straight line. Find the unknowns b and c. (4 mark



Answers written in the margins will not be marked.

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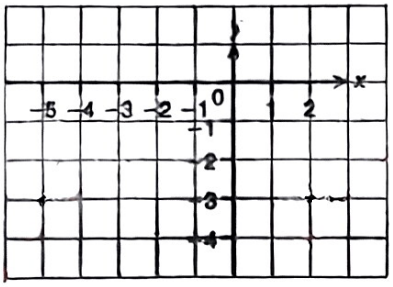
7. (a) Plot $A(2, -3)$ and $B(-5, -3)$ on the rectangular coordinate plane. (2 marks)

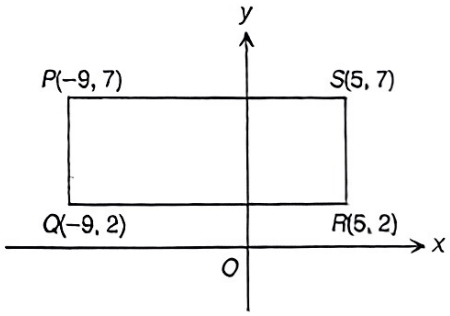


(b) Join AB. Write down the coordinates of the point of intersection of AB and the y-axis. (2 marks)

The coordinates of the point of intersection are ( ).

8. The figure shows a rectangle with vertices $P(-9, 7)$, $Q(-9, 2)$, $R(5, 2)$ and $S(5, 7)$.

(a) Find the lengths of PQ and PS. (3 marks)

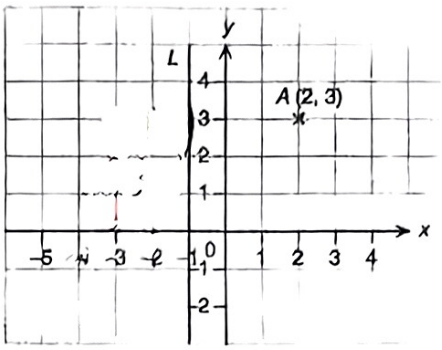


(b) Find the perimeter of rectangle $PQRS$. (2 marks)

9. The figure shows a point $A(2, 3)$ on a rectangular coordinate plane. L is a line parallel to the y-axis and it passes through $(-1, 0)$. If A is reflected about L to A',

(a) plot A' in the figure, (1 mark)

(b) write down the coordinates of A'. (1 mark)



10. Determine whether the following are **discrete data** or **continuous** data. (Circle the correct one)

(2 marks)

(a) The vacancies for different courses provided by a community **(discrete / continuous)**

(b) The depths of wardrobes sold in a furniture warehouse **(discrete / continuous)**

11. The following data show the options of a multiple choice question chosen by a group of students.

B	C	D	D	A	D	D	B	C	D	A
D	A	B	D	C	B	D	C	B	D	B

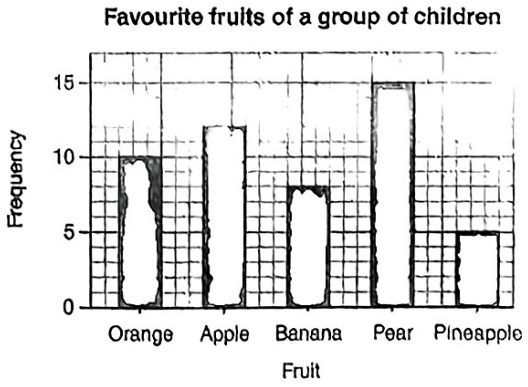
Complete the following frequency distribution table for the above data. (3 marks)

Option	Tally	Frequency
A		
B		
C		
D		
	Total	

12. The bar chart below shows the favourite fruits of a group of children. Each child can only choose one fruit.

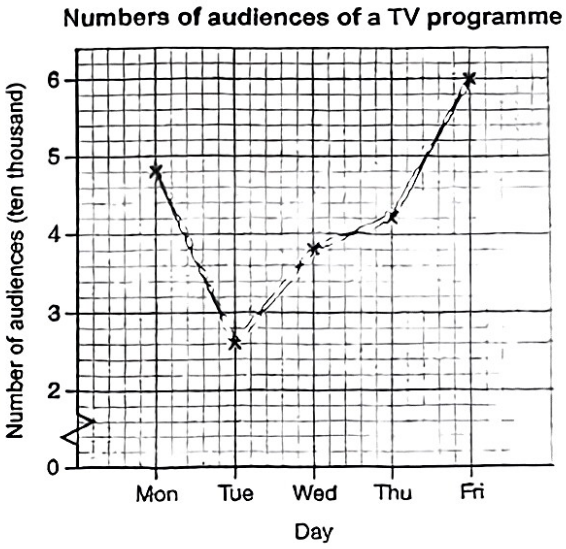
(a) What is the most popular fruit among the children? (1 mark)

(b) How many children are there in the group? (2 marks)



13. The broken line graph below shows the numbers of audiences of a TV programme from Monday to Friday in a week.

(a) On which day was the number of audiences the greatest? (1 mark)



(b) (i) On which day was the number of audiences the least? (1 mark)

(ii) How many audiences were there on that day? (1 mark)

(c) How many audiences were there from Monday to Friday in total? (2 marks)

14. In each of the following, determine whether the underlined number is an **exact** value or an **approximate** value. (Circle the correct one) (2 marks)

(a) The area of a theme park is around <u>870 000</u> m^2. (**exact** / **approximate**)

(b) Tony answers <u>18</u> questions correctly in a written test for driving. (**exact** / **approximate**)

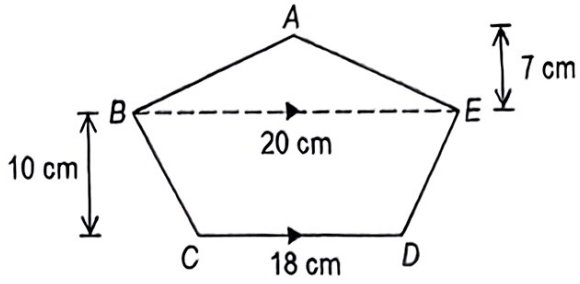
15. (a) Round up 1486.29 to the nearest hundred. (1 mark)

(b) Round down 1486.29 to 1 decimal place. (1 mark)

(c) Round off 65 000 123 to 3 significant figures. (1 mark)

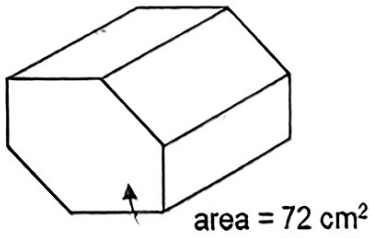
(d) Round off 0.002 959 to 2 significant figures. (1 mark)

16. Find the area of polygon $ABCDE$ in the figure. (3 marks)

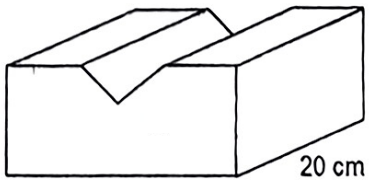


17. It is given that the height and the volume of a right prism are 15 cm and 450 cm^3 respectively. Find the base area of the right prism. (2 marks)

18. The figure shows a right prism with base area 72 cm^2 and volume 432 cm^3. Find its height. (2 marks)



19. The height of the right prism in the figure is 20 cm and the perimeter of its base is 70 cm. Find the total area of all the lateral faces of the prism. (2 mark



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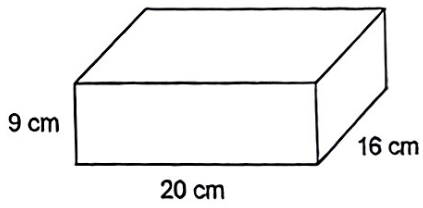
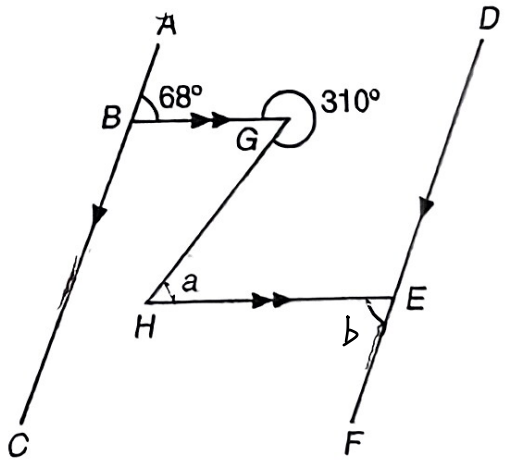
20. The base area and the total surface area of a prism are 50 cm^2 and 600 cm^2 respectively. Find the total area of all the lateral faces of the prism. (2 marks)

21. Find the total surface area of the cuboid in the figure. (3 marks)

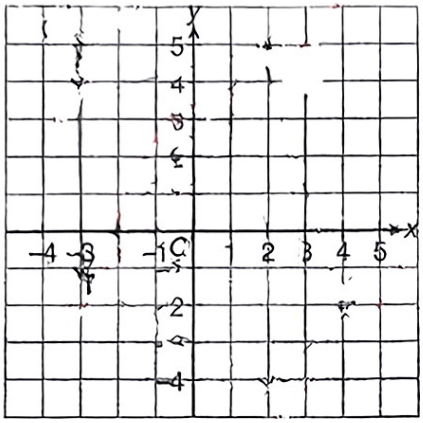


Section B (30 marks): Working steps must be shown in answering questions in this section.

1. In the figure, $AC // DF$, $BG // HE$, $\angle ABG = 68°$ and reflex $\angle BGH = 310°$. Find a and b. (7 marks)



2. (a) Draw a pentagon $ABCDE$ on a rectangular coordinate plane, where the coordinates of the vertices are $A(-3, 4)$, $B(-3, -1)$, $C(2, -4)$, $D(4, -2)$ and $E(2, 5)$. (3 marks)



(b) Find the length of CE. (1 mark)

(c) Hence, find the area of $ABCDE$. (2 marks)

3. It is given that a rectangular tank of length 12 cm and width 8 cm is half filled with water. 8 metal blocks are put into the tank. The volume of each metal block is 12 cm^3. If all the metal blocks are totally submerged and no water overflows, find the rise in water level. (3 marks)

4. The following data show the daily wages (in $) of the technicians in two factories.

Factory *A*: 630, 780, 855, 470, 570 760, 550, 300, 620, 730
Factory *B*: 620, 420, 340, 385, 780, 390, 395, 400, 390, 450

(a) Draw a back-to-back stem-and-leaf diagram to present the above data. (3 marks)

Daily wages of the technicians in two factories

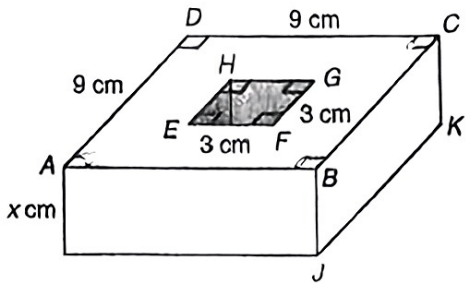
	Stem ($100)	
	3	
	4	
	5	
	6	
	7	
	8	

(b) How many technicians in each factory have their daily wages between $500 and $699? (1 mark)

(c) If only senior technicians can receive daily wages of $700 or above, find the percentage of senior technicians in each factory. (2 marks)

5. The figure shows a solid in the shape of right prism which has a square hole with length 3 cm.

(a) If the volume of the solid is 216 cm^3, find the value of x. (3 marks)



(b) John is going to paint the whole solid in red, including the inner surface. If each mL of paint can cover an area of 10 cm^2, how many mL of paint does John need? (5 marks)

END OF PAPER