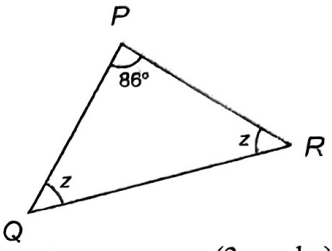
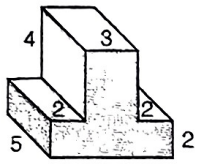
FINAL EXAM. (2020-2021) **S.1 MATH II**

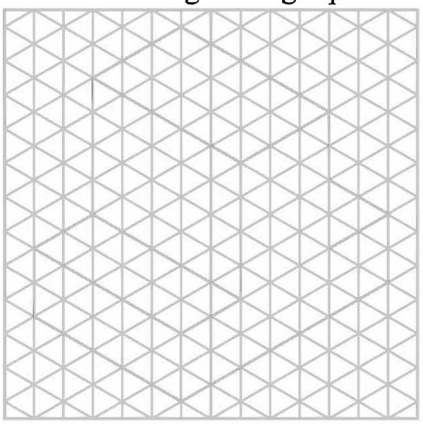
Section A (60 marks) : Working steps must be shown in answering questions.

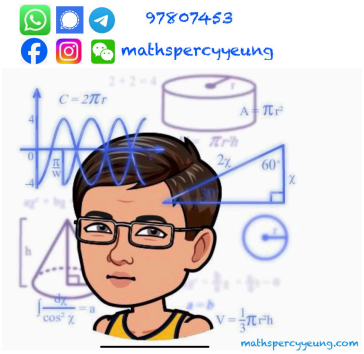
1. Find the unknown in the figure. (2 marks)



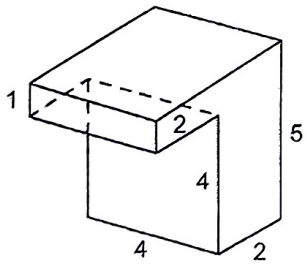
2. Draw the 2-D representation of the given right prism on isometric grid paper. (3 marks)

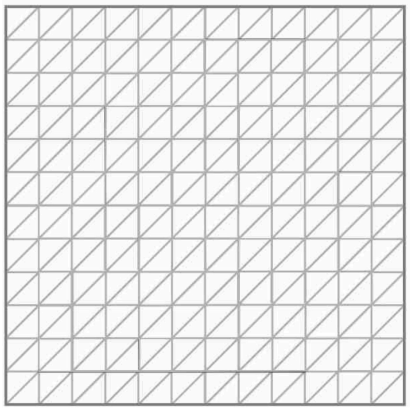






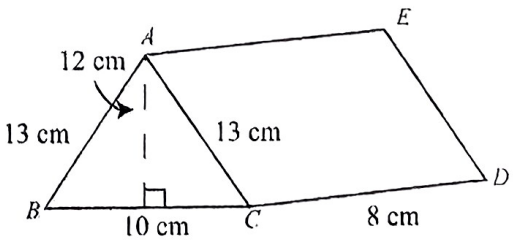
3. Draw the 2-D representation of the given right prism on oblique grid paper. (3 marks)





4. Refer to the right prism in the figure.

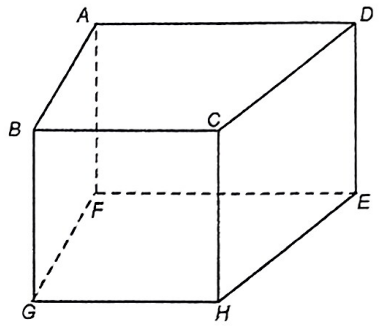
(a) Find the volume of the right prism.



(b) Find the total surface area of the right prism.

(7 marks)

5. In the figure, the volume of right prism $ABCDEFGH$ is 576 cm^3. The base $ABCD$ of the right prism is a trapezium, where AD is parallel to BC. It is given that $\angle BAD = 90°$, $AB = 8$ cm, $AD = 11$ cm, $CD = 10$ cm and $DE = 9$ cm.



(a) Find the length of BC.

(b) Find the total surface area of the right prism.

(8 marks)

6. (a) Round off 29 605 to the nearest thousand.

(b) Round up 83 288 to the nearest ten.

(c) Round down 336 41 to the nearest hundred.

(3 marks)

7. (a) Round off 16.457 02 to the nearest integer.

(b) Round up 16.457 02 to 2 decimal places.

(c) Round down 16.457 02 to 1 decimal place.

(3 marks)

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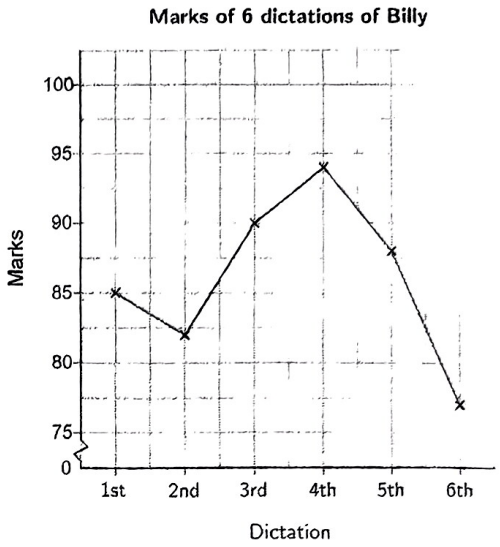
3. The broken line graph below shows the marks of 6 dictations of Billy.

(a) In how many dictations did Billy get 90 marks or higher?

(b) Find the average mark of the 6 dictations. (4 marks)



9. The table below shows the favourite tourist spots in Hong Kong of 200 tourists.

Tourists spots	The Peak	Ladies' Market	Victoria Harbour	Stanley	Big Buddha
Frequency	80	20	45	40	15

(a) Complete the following table.

Tourists spot	Angle at the centre of the sector
The Peak	
Ladies' Market	
Victoria Harbour	
Stanley	
Big Buddha	

(b) Draw a pie chart to present the data in (a).

(7 marks)

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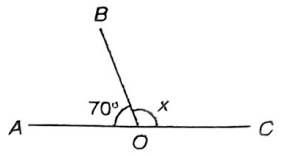
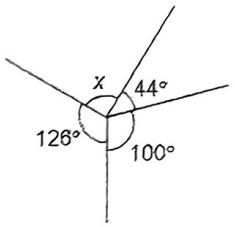
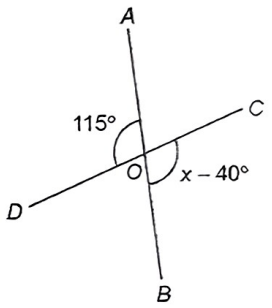
10. In the figure, AOC is a straight line. Find x. (2 marks)



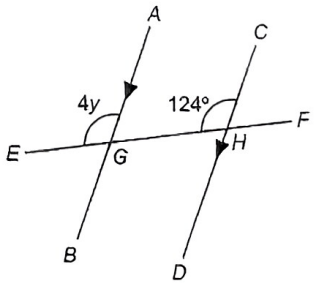
11. Find x in the following figure. (2 marks)



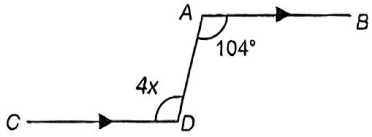
12. In the figure, AB and CD intersect at O. Find x. (2 marks)



13. In the figure, AGB, CHD and $EGHF$ are straight lines, and AB // CD. Find y. (2 marks)



14. In the figure, AB // CD. Find x. (2 marks)



Answers written in the margins will not be marked

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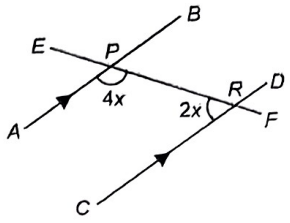
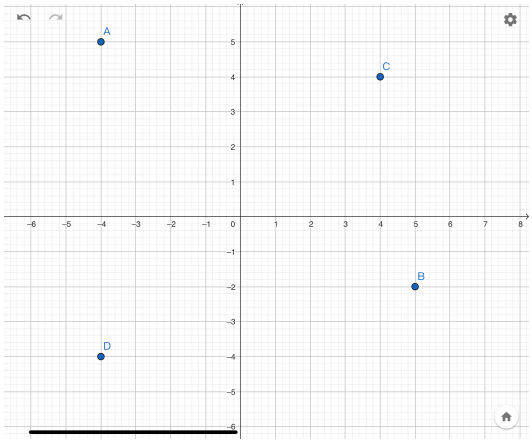
15. In the figure, *APB*, CRD and *EPRF* are straight lines, and *AB* // *CD*. Find *x*. (2 marks)



16. (a) Referring to the figure, write down the coordinates of points *B* to D. (3 marks)



The coordinates of *A* = (-4,5)

The coordinates of *B* = ( )

The coordinates of *C* = ( )

The coordinates of *D* = ( )

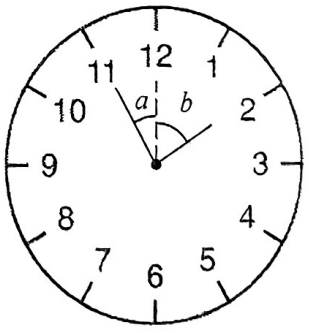
(b) In which quadrants do the point *A* and *C* lie? (2 marks)

(c) Join A and B then join *C* and *D*. Find the coordinates of intersection point of *AB* and *CD*. (3 marks)

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

17. In the figure, the clock shows the time 1:55.

(a) Find *a* and *b*.



(b) David claims that the angle between the hour hand and the minute hand of the clock is a right angle. Do you agree? Explain your answer.

(6 marks)

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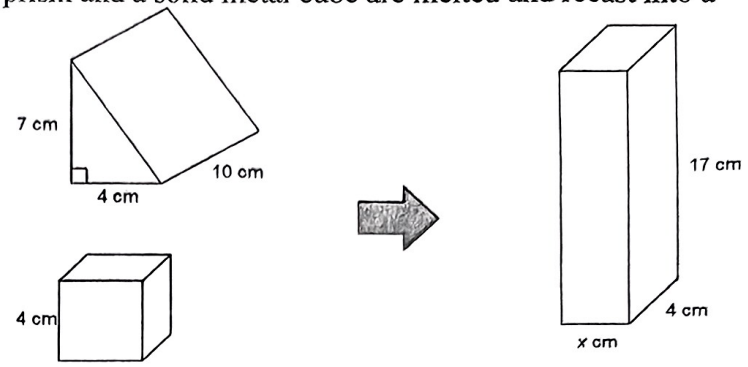
18. In the figure, a solid metal right triangular prism and a solid metal cube are melted and recast into a solid cuboid.



(a) Find the value of x.

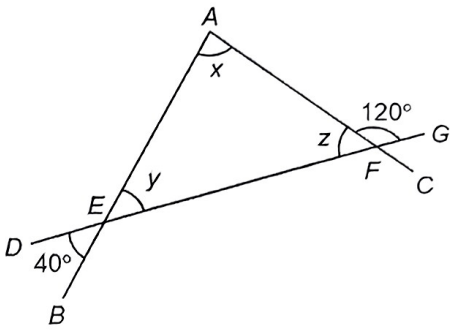
(b) Find the total surface area of the cuboid.

(c) The cost of painting the cuboid is \$3/cm^2. Peter claims that the cost of painting the cuboid does not exceed \$750, do you agree with him? Explain your answer.

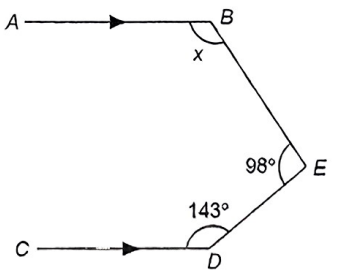
(10 marks)

19. Estimate the value of $965.12 - (126.4 + 18.03 \times 20.59)$ by rounding down each number to 2 significant figures. (3 marks)

20. In the figure, DG intersects AB and AC at E and F respectively. Find x, y and z. (6 marks)



21. In the figure, AB // CD. Find x. (4 marks)



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22. 40 teenagers are divided into 2 groups. The weights (correct to the nearest kg) of Group *B* teenagers are given below.

Group *B*:

50	42	49	39	71	62	58	45	43	56
42	40	48	40	61	46	41	43	39	54

(a) Complete the back-to-back stem-and-leaf diagram to present the above data.

Weights of teenagers in group *A* and group *B*

Leaf (1 kg)	Stem (10 kg)	Leaf (1 kg)
	3	
9 8	4	
2 1 1 0	5	
9 7 7 4 3 3 2 1 1	6	
5 2	7	
7 1	8	
0	9	

(b) A teenager with weight greater than 65 kg is said to be overweight. Find the percentage of teenagers who are overweight in each group.

(c) Which group of teenagers is heavier on the whole? Explain your answer.

(6 marks)

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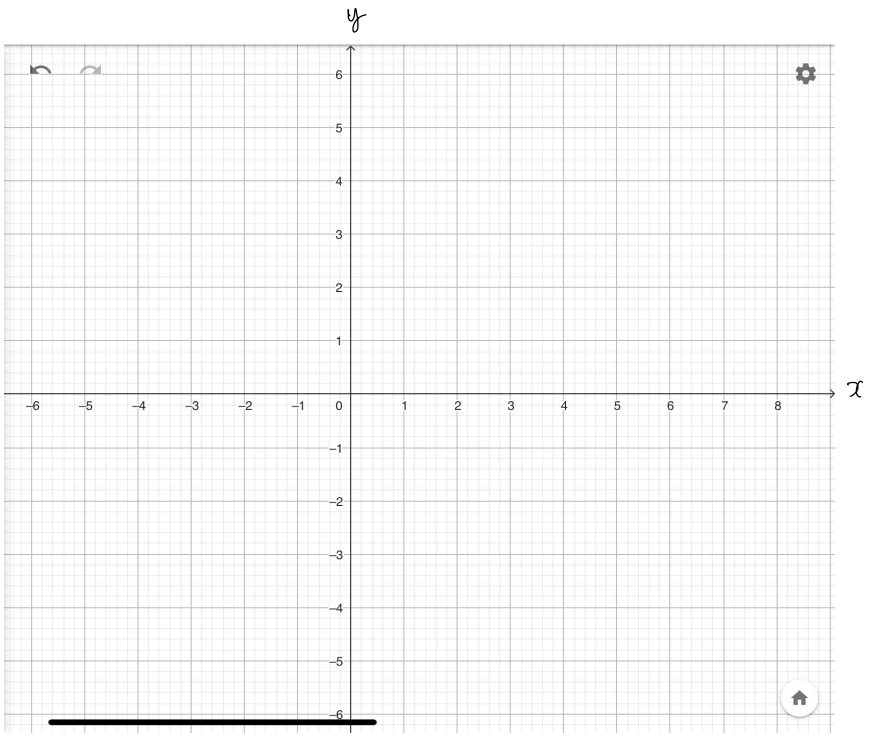
23. (a) Plot $A(3, 0)$ and $B(6, 4)$ on the following rectangular coordinate plane.



(b) Draw a line L_3 passing through A and B. If L_3 intersects the x-axis and y-axis at S and R respectively, find the coordinates of S and R.

(5 marks)

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