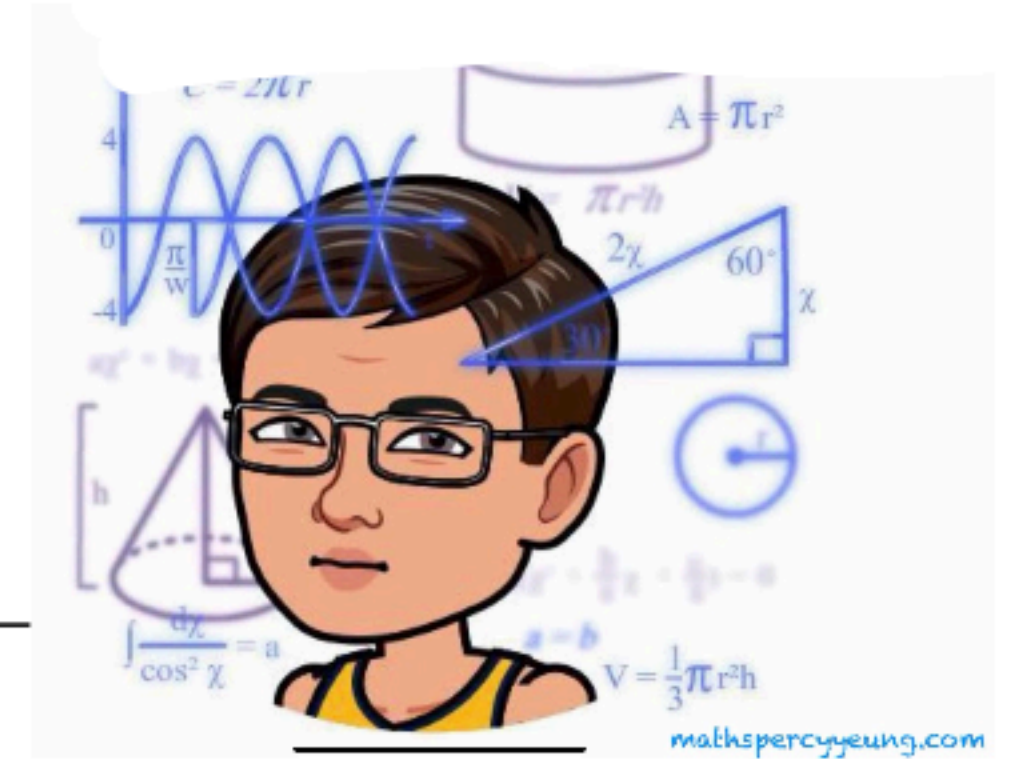


Final Examination 2023-2024

Form 1
173 students

MATHEMATICS
Paper II
Time Allowed: 1 hour



Name: _____ Class No. _____ Class: _____

Please read the following instructions very carefully.

- Answer **ALL** questions in the spaces provided in this **Question-Answer Paper**.
- All rough work should be done on the rough work paper provided, but will not be marked.
- The diagrams in this paper are not necessarily drawn to scale.
- This paper carries 100 marks.

Marks:

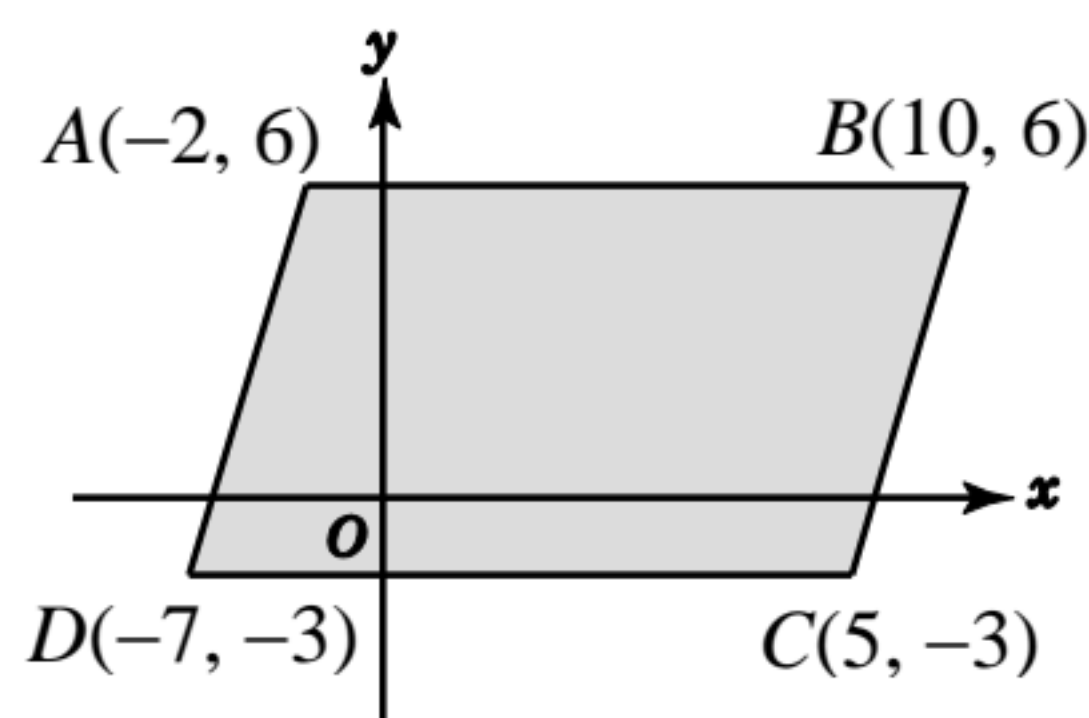
/ 100

	<u>Answers</u>	<u>Marks</u>
1. Arrange the following numbers in ascending order. $3, -\frac{2}{5}, 0, -2.4, \frac{19}{6}$	1. _____	2
2. Evaluate the following. (a) $\frac{-28}{-7} + (+10)(-6)$	2. (a) _____	2
(b) $-3^2 + (-2)^4$	(b) _____	2
3. Find the L.C.M. of $3^2 \times 5$, $2^2 \times 3^5$ and $2^3 \times 7^2$. Express your answer using index notation.	3. _____	2
4. $74\star 18$ is a 5-digit number, where $\star$ is an integer from 0 to 9 inclusive. If $74\star 18$ is divisible by 6, write down all the possible value(s) of $\star$.	4. _____	2
5. Represent the following word phrase by algebraic expression: Multiply the sum of r and s by 7. Then divide the result by the cube of m .	5. _____	2
6. Simplify $(2a - 7a + 3a) \times 6a$.	6. _____	2
7. If $x = -5$, find the value of the expression $\frac{2x+5}{2-x^2}$.	7. _____	2
8. In the figure, the 1st pattern consists of 4 dots. For any positive integer n , the $(n+1)$ th pattern is formed by adding 3 dots to the n th pattern. Find the number of dots in the 7th pattern.	8. _____	2
		
9. Solve the following equations. (a) $8(p-9) - 2(p+1) = -14$	9. (a) _____	2
(b) $-13 - \frac{2c-7}{5} = -12$	(b) _____	3
10. 4 times the result of subtracting 5 from a number is -64 . Find the number.	10. _____	2
Subtotal:		/25

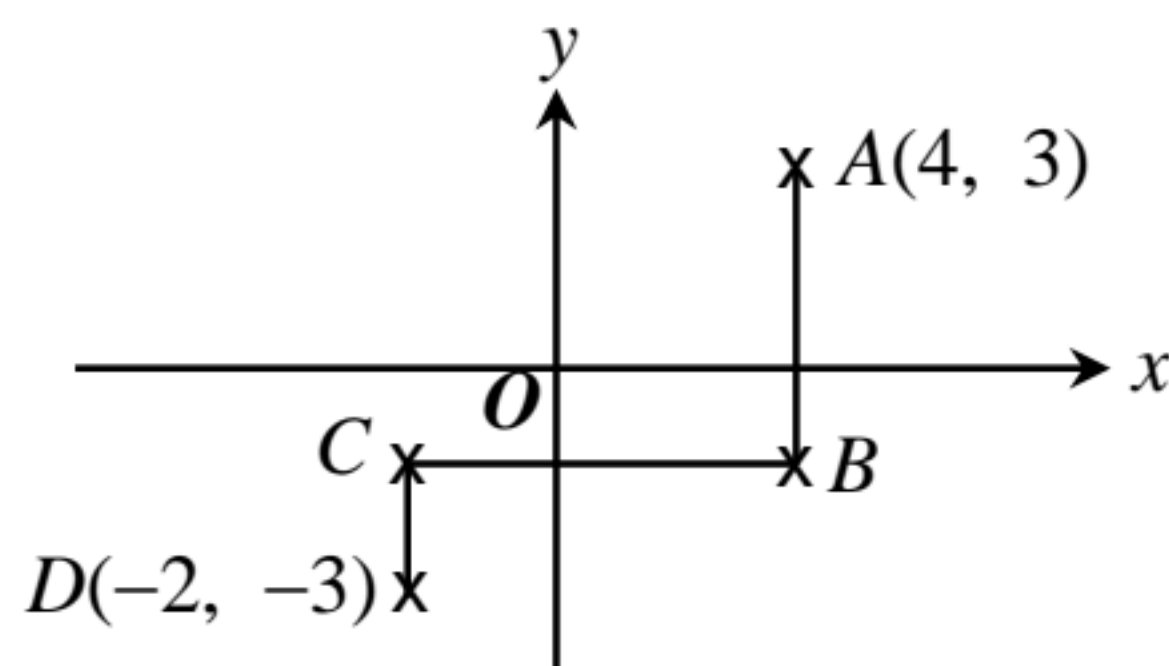
11. Consider the polynomial $7x^5y^3 - \frac{3xy^2}{4} - 1 + 6x^2y$. Find	11.	
(a) the coefficient of xy^2 term,	(a) _____	1
(b) the constant term,	(b) _____	1
(c) the order of the polynomial.	(c) _____	1
12. Expand $(-3m)(-1 - 2m^2 + 5m)$ and arrange the terms in ascending powers of m .	12. _____	2
13. Simplify $(-2ab^3)(2ab)$.	13. _____	2
14. Simplify $\frac{xy^6}{-20} \times \frac{4y^3}{x^8}$.	14. _____	2
15. It is given that $a^r = 3$ and $a^s = 5$, where r and s are positive integers. Find the value of a^{r+2s} .	15. _____	3
16. The sum of three consecutive numbers is 99. Find the largest number.	16. _____	2
17. The daily pocket money of Amy is \$10 more than twice that of Ben. If the difference between their pocket money is \$35, find the pocket money of Ben.	17. _____	3
18. If $d\%$ of 300 is 132, find the value of d .	18. _____	2
19. It is known that the area of sea ice last year was 600 km^2 . If the area of sea ice in a district decreases by 17% this year, find the area of sea ice this year.	19. _____	2
20. In a car park, the number of cars decreases by 63 today compared with that of yesterday. The decrease is 45% of the number of cars yesterday. Find the number of cars in the car park today.	20. _____	3
21. There were 300 members in a club last month, and 120 of them were VIP. This month, 5% of the VIP members withdraw their membership and 15% of the regular members are upgraded to VIP members. Find the increase in the number of VIP members.	21. _____	3
22. The cost of a light bulb is \$40 and it is sold for \$64. Find the percentage profit.	22. _____	2
23. Amy sells a watch at a profit of 15% and she gains a profit of \$18. Find the cost of the watch.	23. _____	2
24. If a book is sold at its marked price, then the percentage profit is 30%. If it is sold at a 30% discount on its marked price, then a loss of \$18 is made. Find the cost of the book.	24. _____	3
Subtotal:		/34

25. Which of the following points lie on the x -axis?
 $A(2, 0)$, $B(0, 13)$, $C(0, 6)$, $O(0,0)$

26. Find the area of the parallelogram $ABCD$.



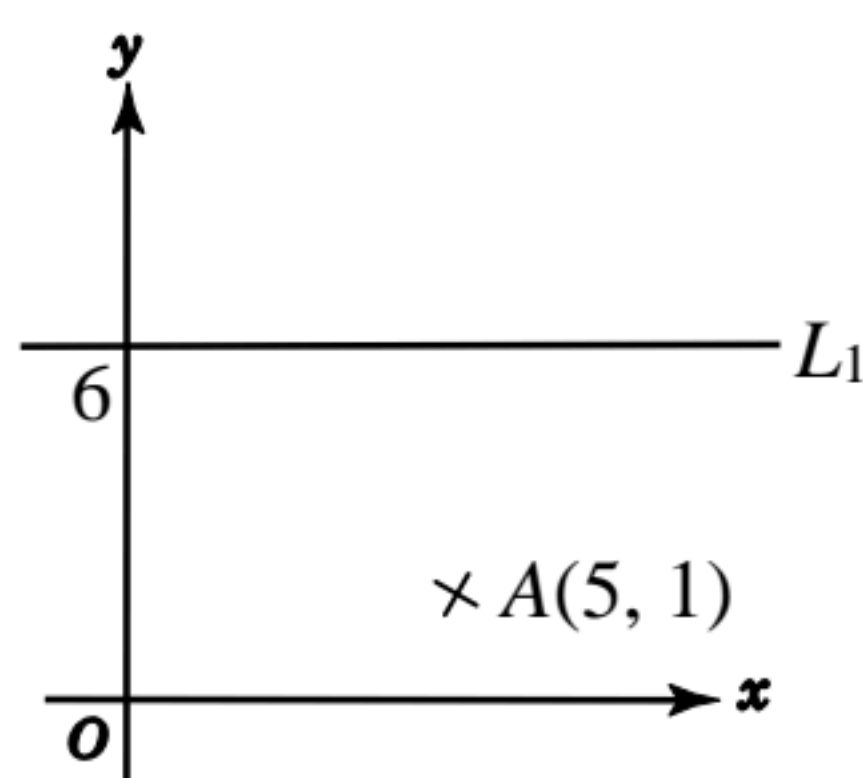
27. In the figure, AB and CD are vertical line segments. BC is a horizontal line segment. Find the total length of the three line segments.



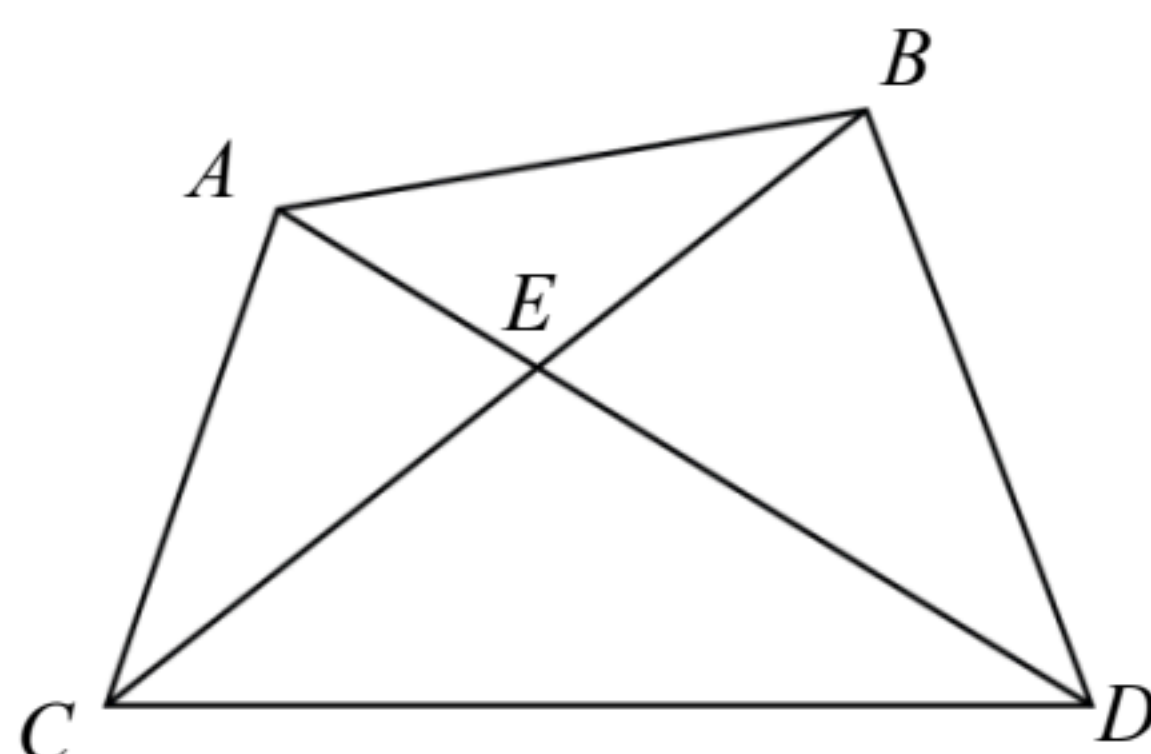
28. $A(x - 4, 4)$ and $B(3x + 2, 7)$ are the two end-points of a vertical line segment. Find the value of x .

29. If $A(-4, 1)$ is rotated clockwise about the origin through 90° , and then reflected with respect to the x -axis to obtain A_1 , find the coordinates of A_1 .

30. If $A(5, 1)$ is reflected with respect to L_1 to $B(5, b)$, find the value of b .



31. Name two obtuse-angled triangles in the figure.
 Write your answers separately in the spaces provided.



25. _____ 2

26. _____ 2

27. _____ 2

28. _____ 2

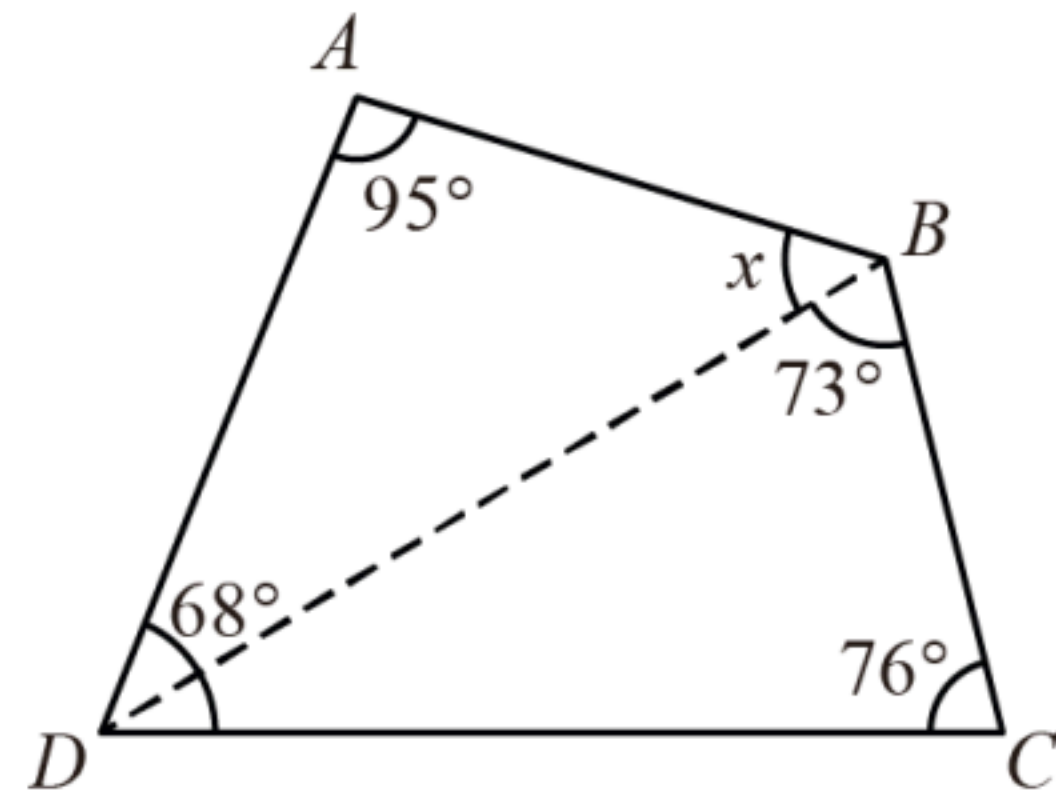
29. _____ 2

30. _____ 2

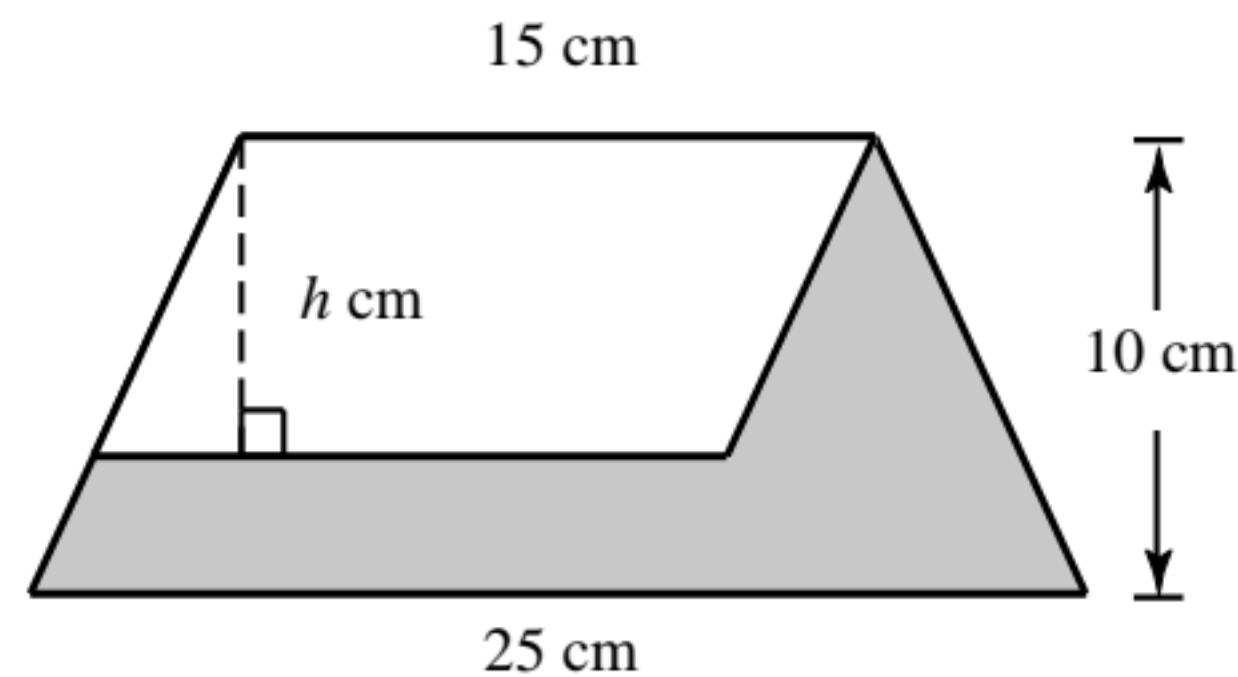
31. _____ 1
 _____ 1

Subtotal: /14

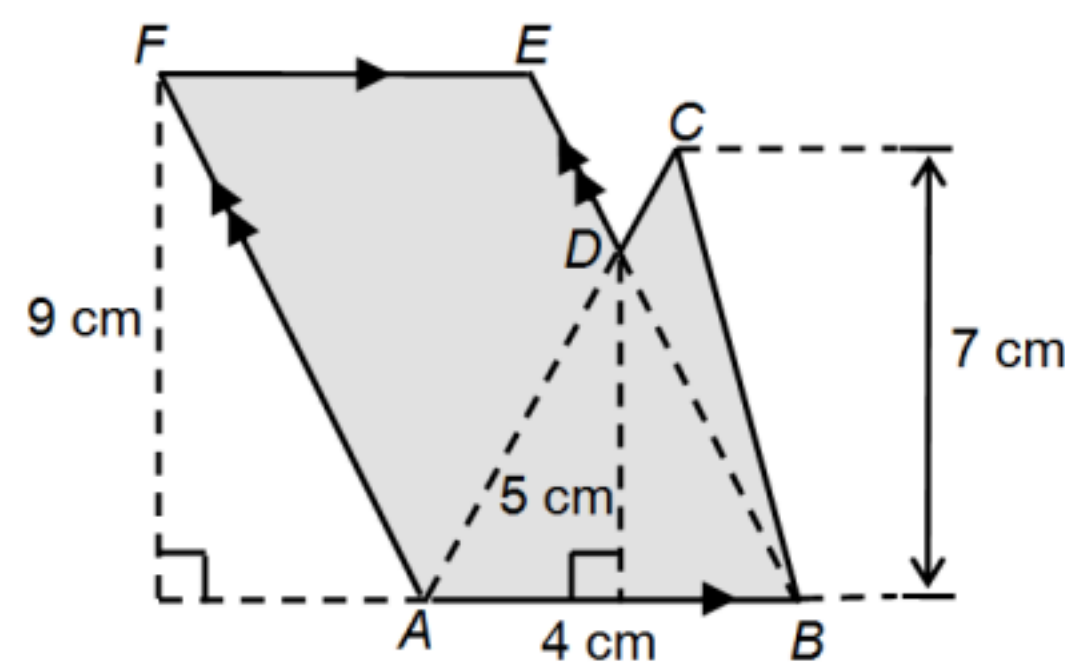
32. Find the value of x in the figure.



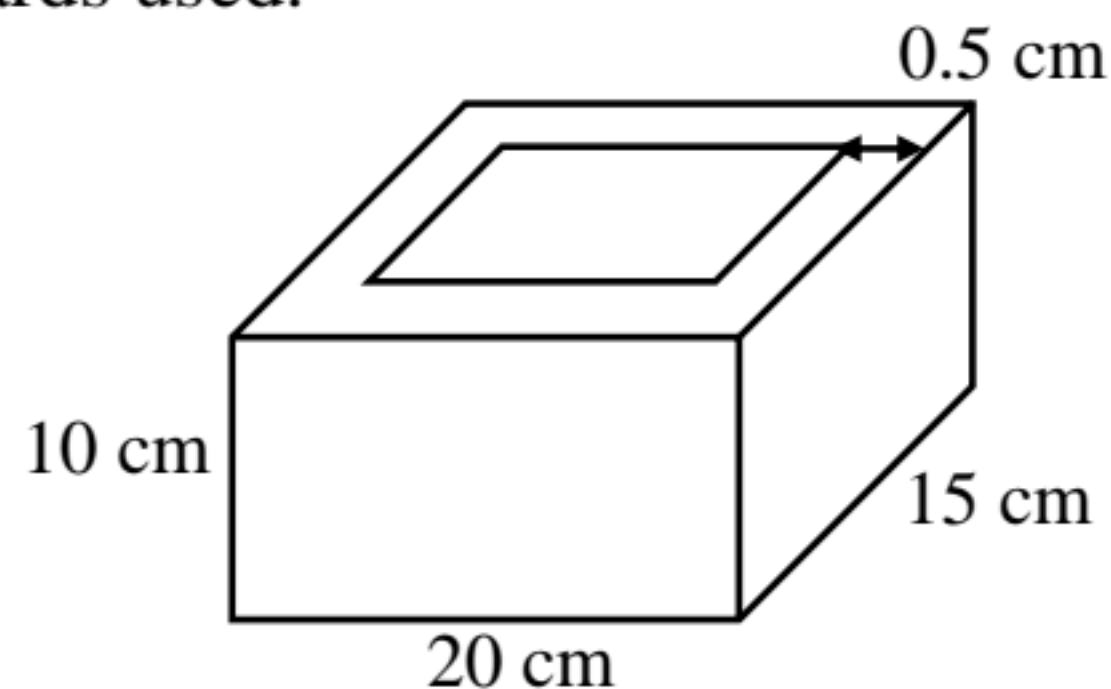
33. In the figure, the area of the shaded region is 95 cm^2 . Find the value of h .



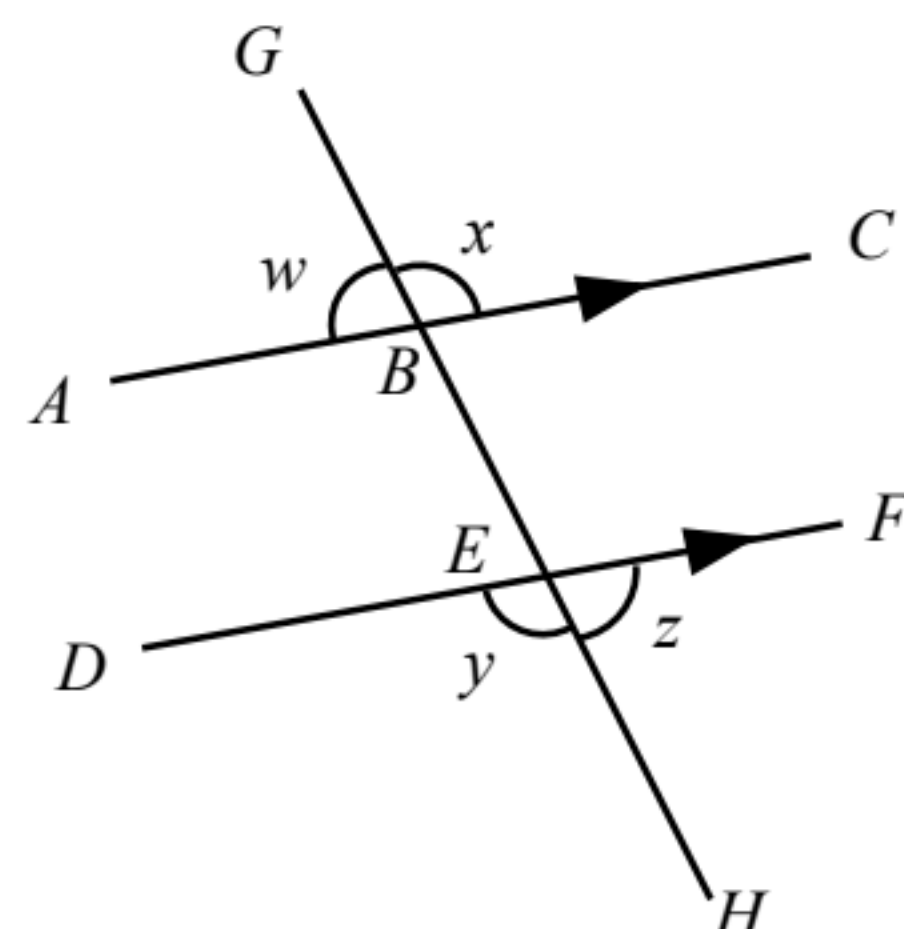
34. In the figure, ADC and BDE are straight lines. Find the area of the shaded region.



35. In the figure, an open box taking the shape of cuboid is made of wooden boards 0.5 cm thick. Find the total volume of the wooden boards used.



36. In the figure, ABC , DEF and $GBEH$ are straight lines, and $AC \parallel DF$. Determine whether each of the following is true or false. Circle the correct answers.



(a) $x + y = 180^\circ$

(b) $x + z = 180^\circ$

(c) $w + x + y + z = 360^\circ$

32. _____

2

33. _____

2

34. _____

3

35. _____

3

36.

(a) True / False

1

(b) True / False

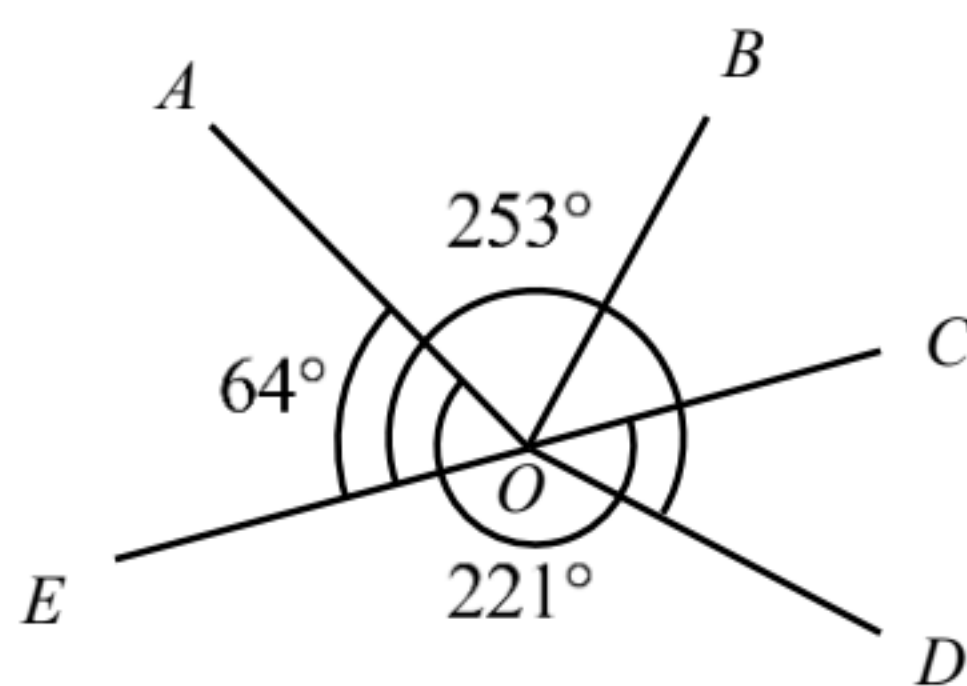
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(c) True / False

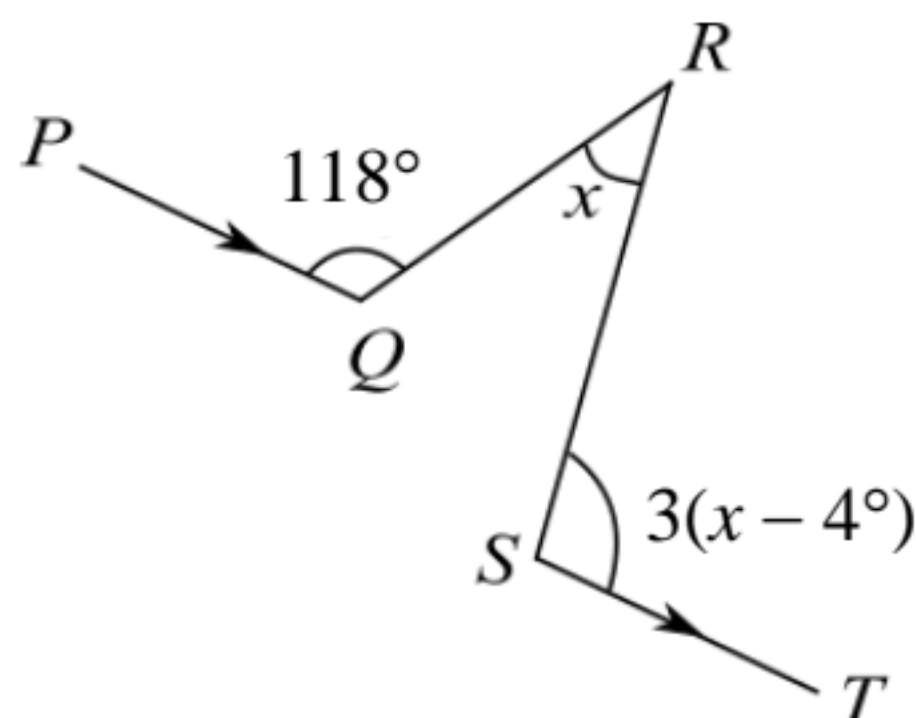
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37. In the figure, reflex $\angle EOD = 253^\circ$, reflex $\angle AOC = 221^\circ$ and $\angle AOE = 64^\circ$.

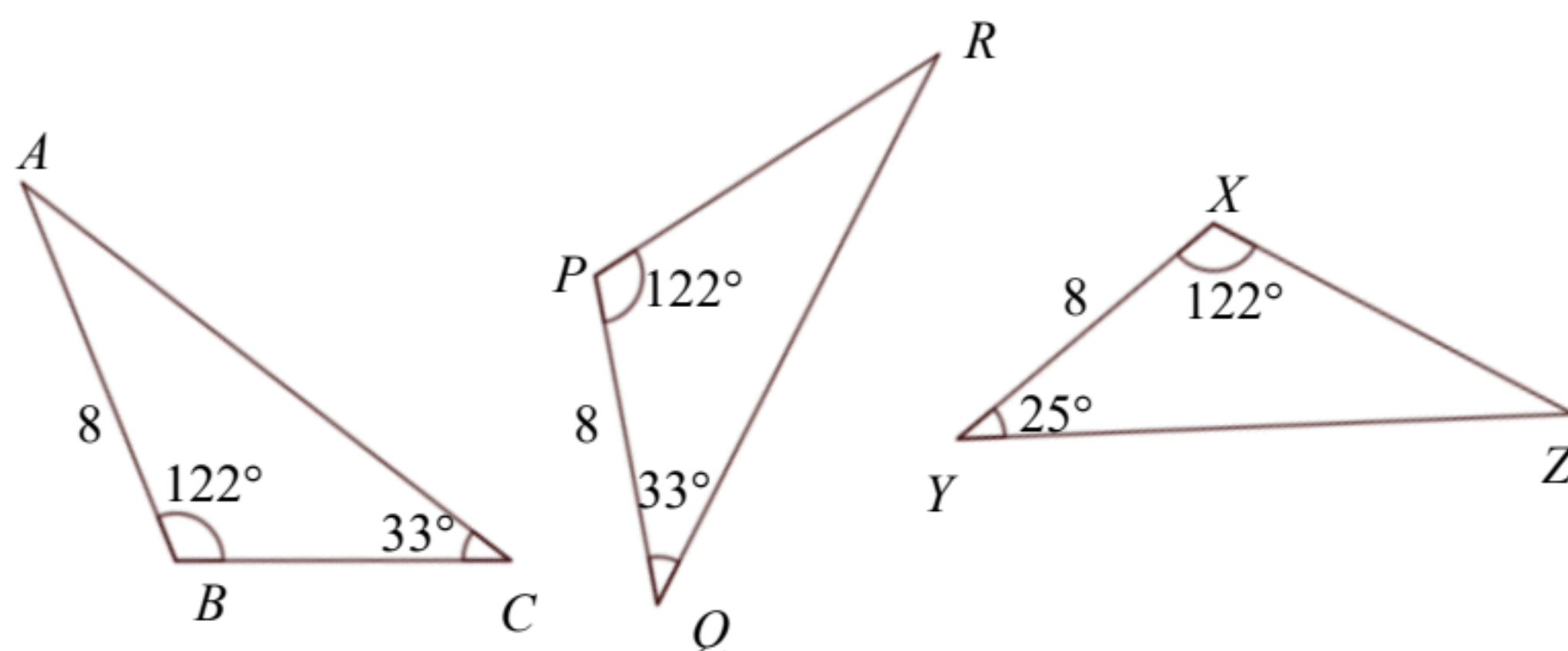
- (a) Find $\angle EOD$.
(b) Find $\angle COD$.



38. Find the value of x in the figure.

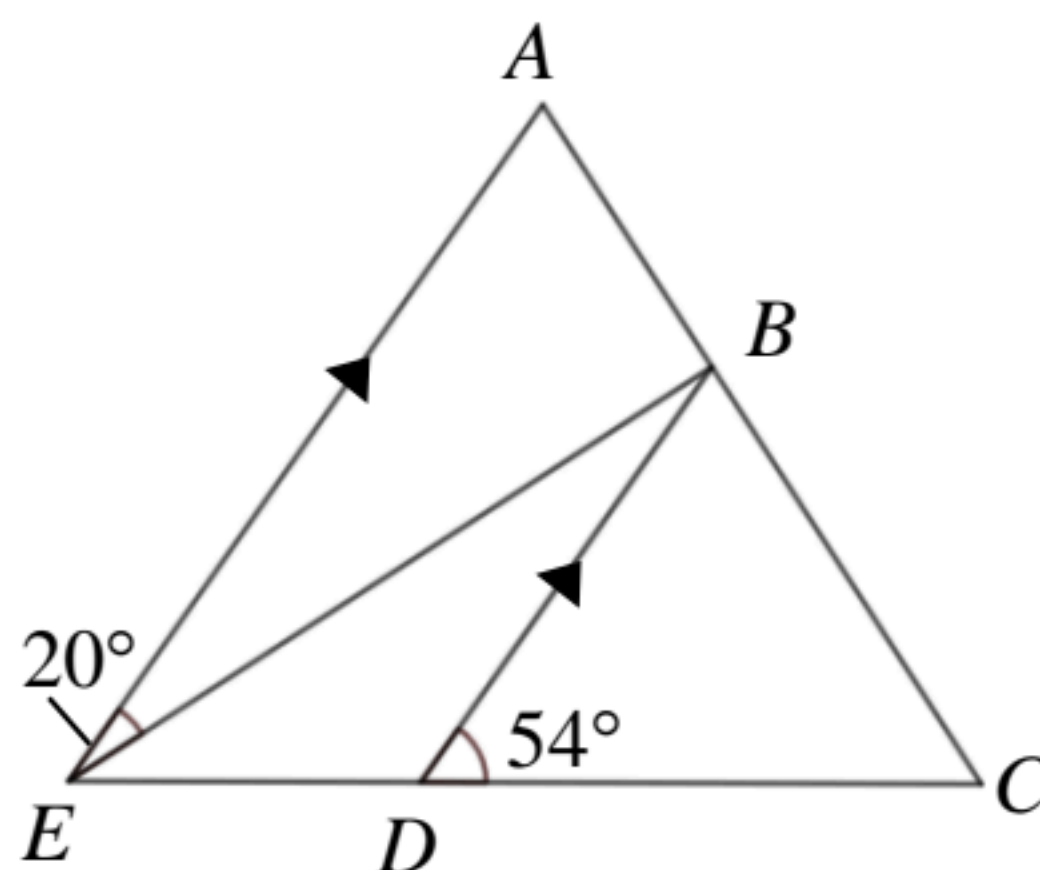


39. In the figure, find two congruent triangles and give a reason.



40. In the figure, ABC and CDE are straight lines, $BD = CD$. Find

- (a) $\angle CBD$ and
(b) $\angle BED$.



37.

(a) _____

2

(b) _____

2

38. _____

3

39. _____

2

(_____)

1

40.

(a) _____

2

(b) _____

2

Subtotal:

/14

– END OF PAPER –