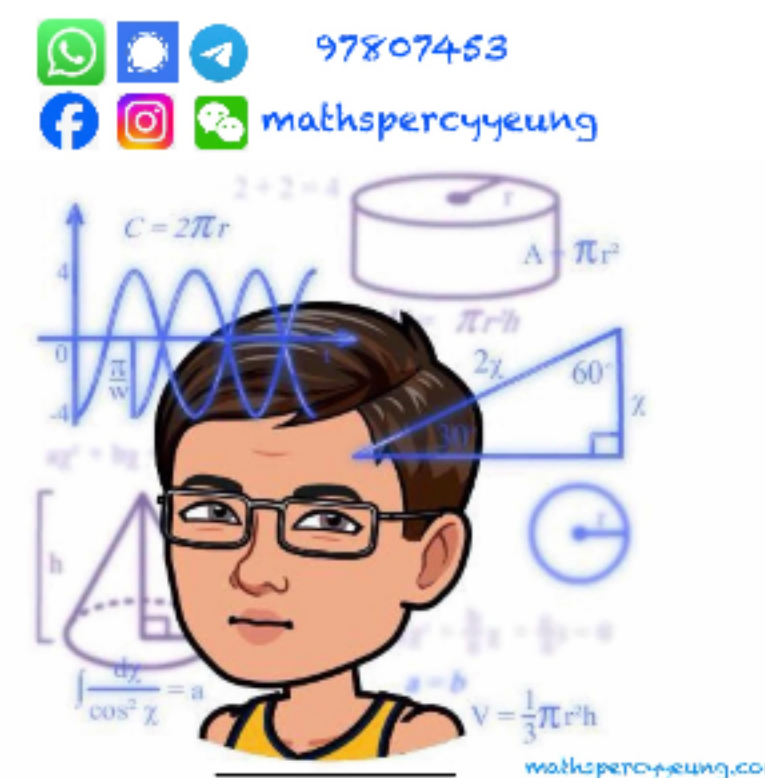


Final Examination 2020-2021

Form 1
174 students

MATHEMATICS
Paper II
Time Allowed: 1 hour



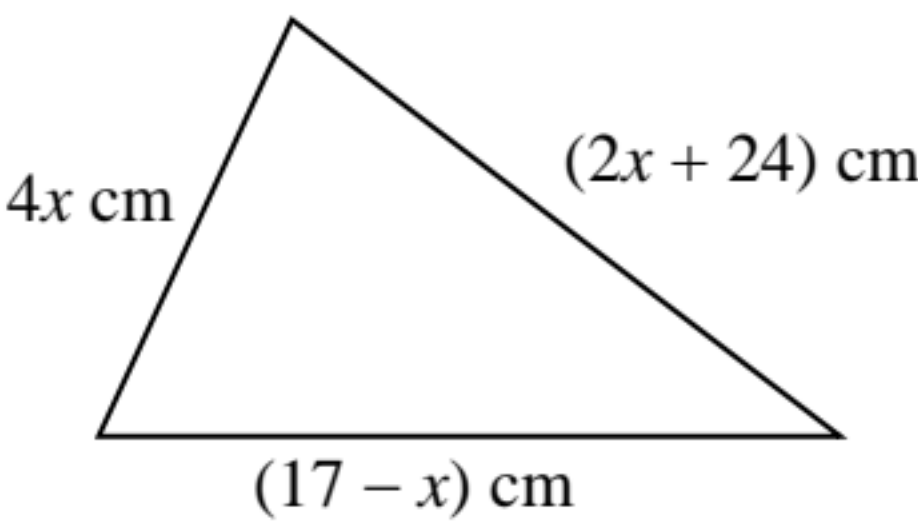
Name: _____ Class No. _____ Class: _____

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:

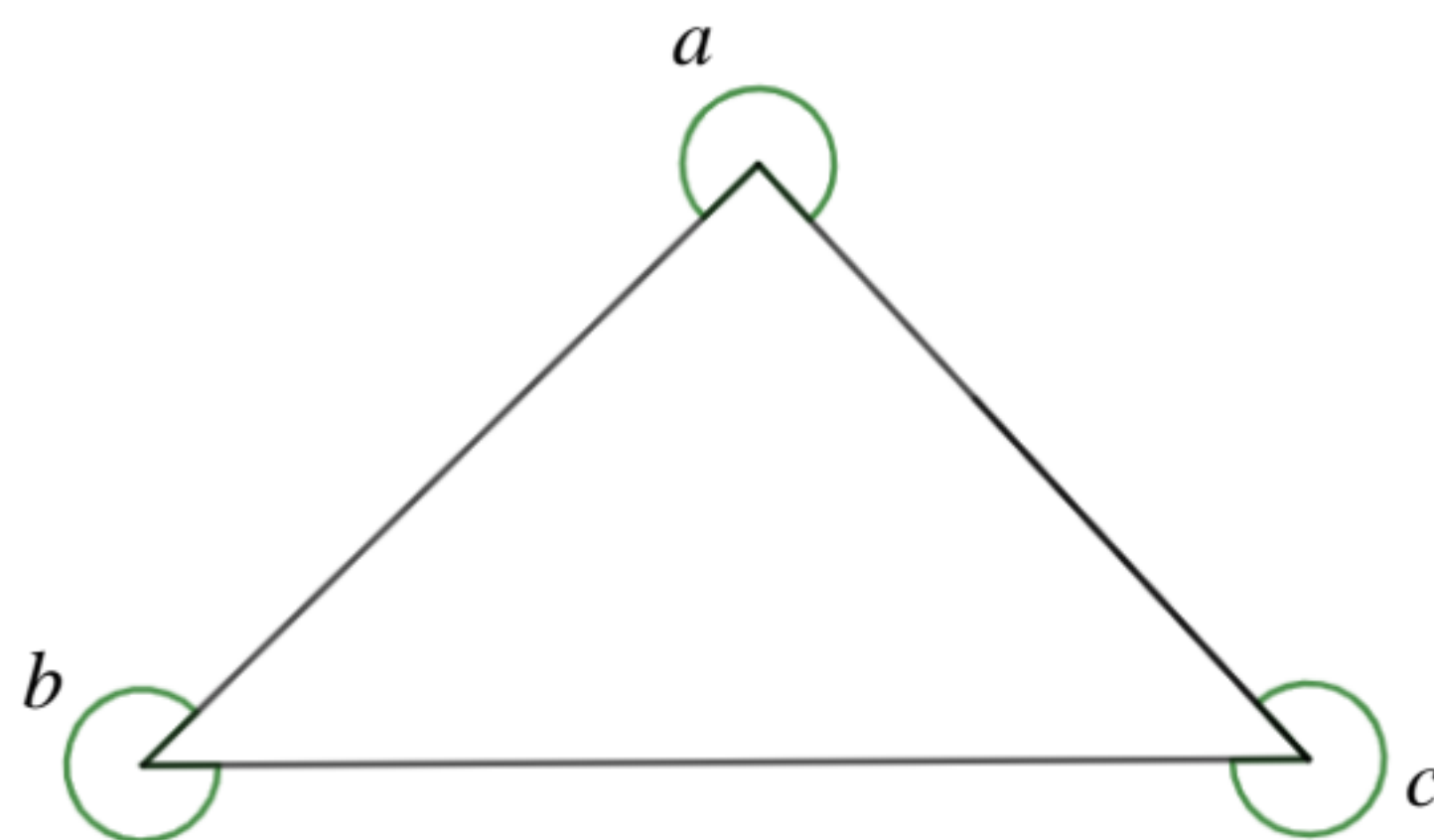
/ 100

	<u>Answers</u>	<u>Marks</u>
1. Express 108 as a product of prime factors using index notation.	1. _____	2
2. Find the H.C.F. of $2^3 \times 3$, $2^3 \times 3^2$ and $2^2 \times 3^2 \times 5$.	2. _____	2
3. If $96\star 2$ is a 4-digit number which is divisible by 6, write down all the possible values of $\star$.	3. _____	2
4. Arrange the following numbers in descending order. -4.5 , $\frac{1}{4}$, $-\frac{2}{3}$, 0 , 3 , $-\frac{3}{5}$	4. _____	2
5. Evaluate $(-2)^3(-1)^2 + (-3)$.	5. _____	2
6. Represent the following word phrase by an algebraic expression: Divide the product of 3 and the square of a by the sum of b and 7.	6. _____	3
7. Simplify $5d \times 6 - (4d + 2d) \div 3$.	7. _____	2
8. Consider the formula $c = 9a - \frac{b^2}{2}$. If $a = \frac{1}{3}$ and $b = -4$, find the value of c .	8. _____	3
9. In the following sequence, the $(n + 1)$ th term will be obtained by multiplying the n th term by -3 . Find the 6th term. $4, -12, 36, -108, \dots$	9. _____	3
10. Solve the following equations. (a) $-7(2x - 10) = 42$ (b) $\frac{m}{2} - \frac{m}{3} = 20$	10. _____ (a) $x =$ _____ (b) $m =$ _____	2 2
11. In the figure, the perimeter of the triangle is 53 cm. Find the value of x .	11. _____	2
		
12. John and Mary each has 100 marbles originally. How many marbles should John give to Mary such that the number of marbles Mary has will be 3 times the number of marbles John has?	12. _____	3
13. Some sweets are evenly shared among a group of children. Each of them gets 30 sweets. If the number of children reduces by 8, each child will get 5 more sweets. How many children are there originally?	13. _____	3
Subtotal:		/33

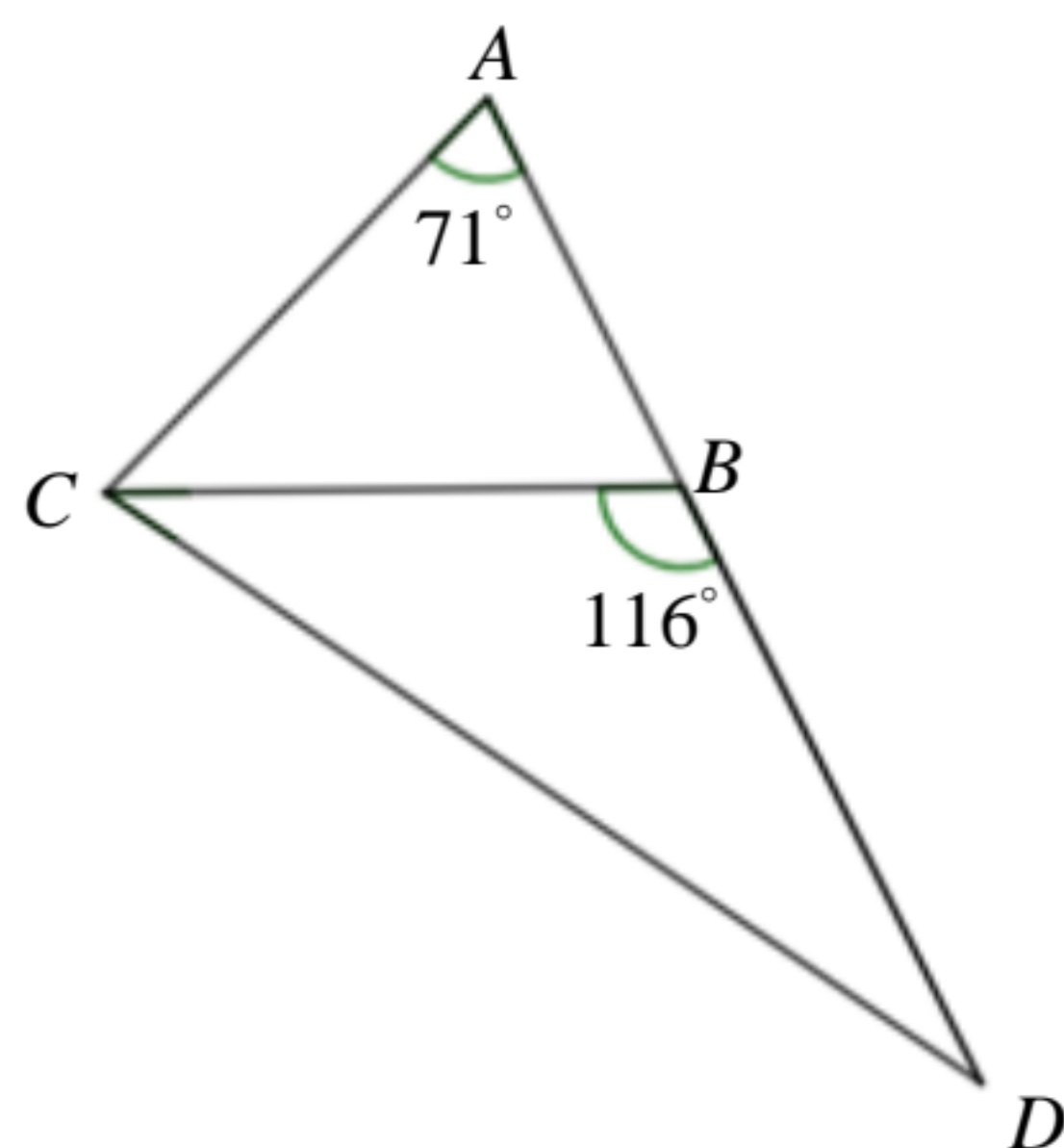
14. If 15% of m is 54, find the value of m .
15. In a school, there were 240 students last year. Find the percentage change if the number of students this year is 204.
16. Mary is 160 cm tall. David is 8% taller than Mary, and Peter is 25% shorter than David. Find the height of Peter.
17. The marked price of a shirt is \$672. If it is sold at a discount of 25%, the percentage profit will be 40%. Find the cost price of the shirt.
18. Mr. Lee bought 100 apples for \$250. 12 apples were rotten and he sold the remaining apples at \$4 each. Find the overall percentage profit.
19. Find the reflex angle formed by the hour hand and the minute hand of the clock shown below.



20. In the figure, find $a + b + c$.

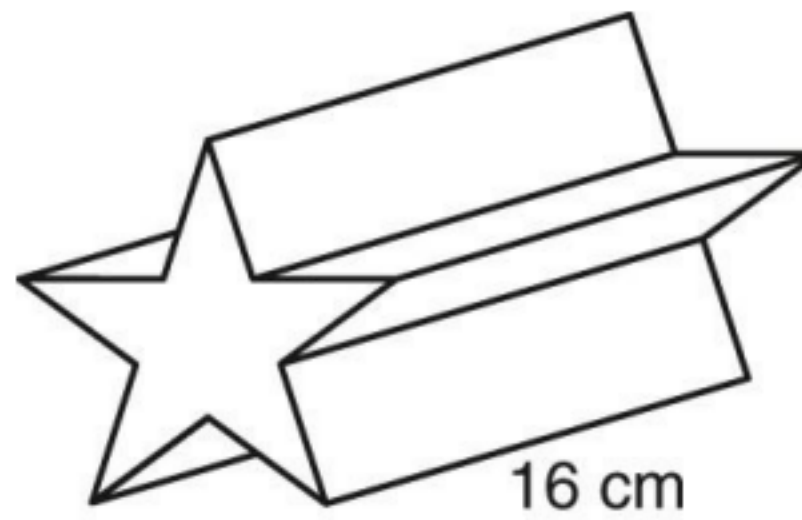


21. In the figure, ABD is a straight line. Find $\angle ACB$.

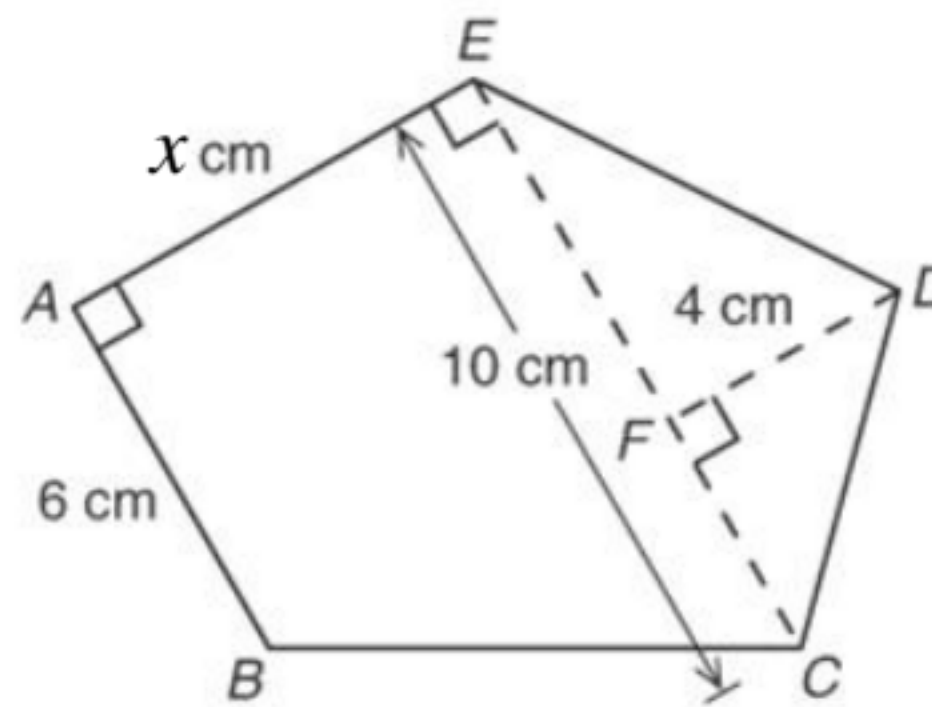


14. _____	2
15. _____	2
16. _____	3
17. _____	3
18. _____	3
19. _____	3
20. _____	3
21. _____	3
Subtotal:	/22

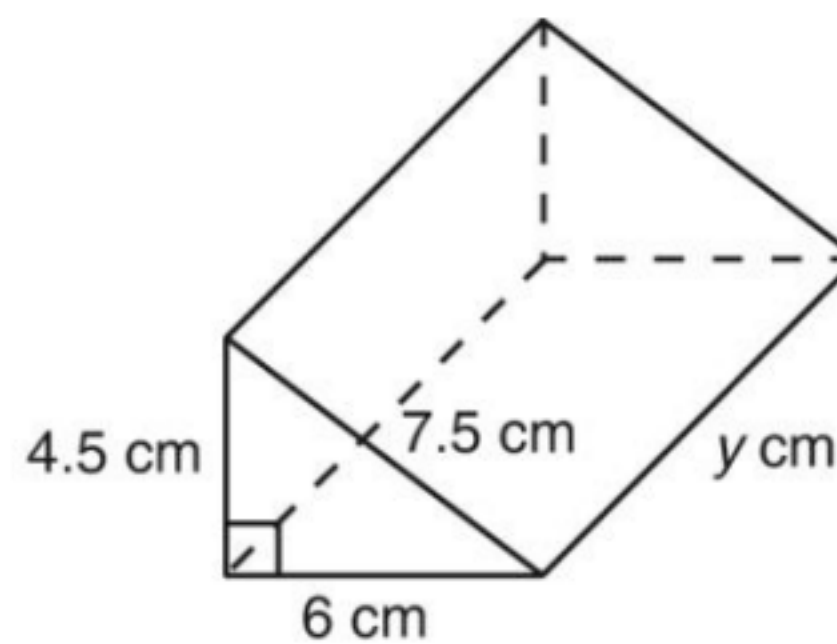
22. The base area of the following prism is 30 cm^2 . Find its volume.



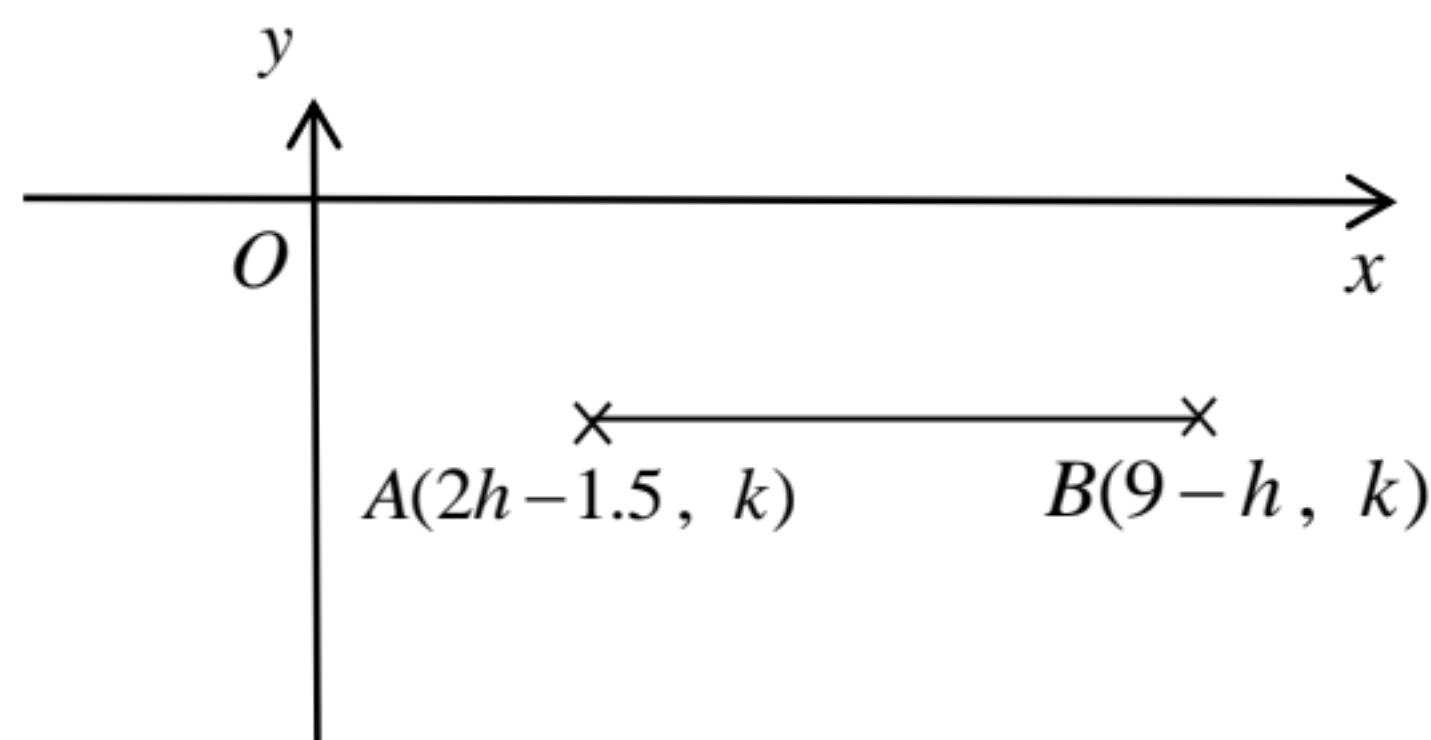
23. In the figure, the area of the polygon is 76 cm^2 . Find the value of x .



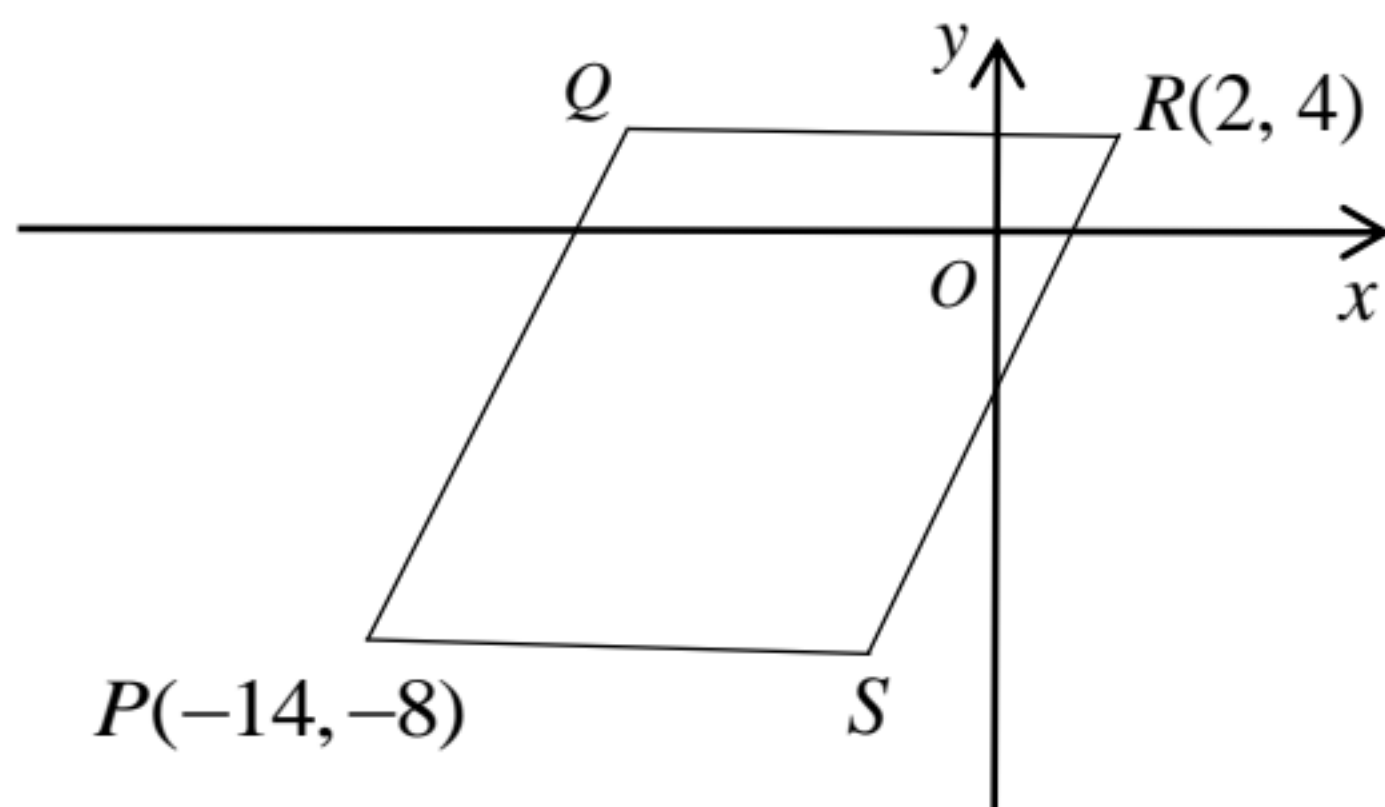
24. If the total surface area of the following prism is 297 cm^2 , find the value of y .



25. (a) Write down the order of the polynomial $mn^2 - 2 + 3n$.
 (b) Expand $(mn^2 - 2 + 3n)(mn)$.
26. It is given that $a^n b^n = 18^n$, where a and b are positive integers. Write down a pair of possible values of a and b .
27. In the figure, the distance between $A(2h - 1.5, k)$ and $B(9 - h, k)$ is 7.5 units. Find the value of h .

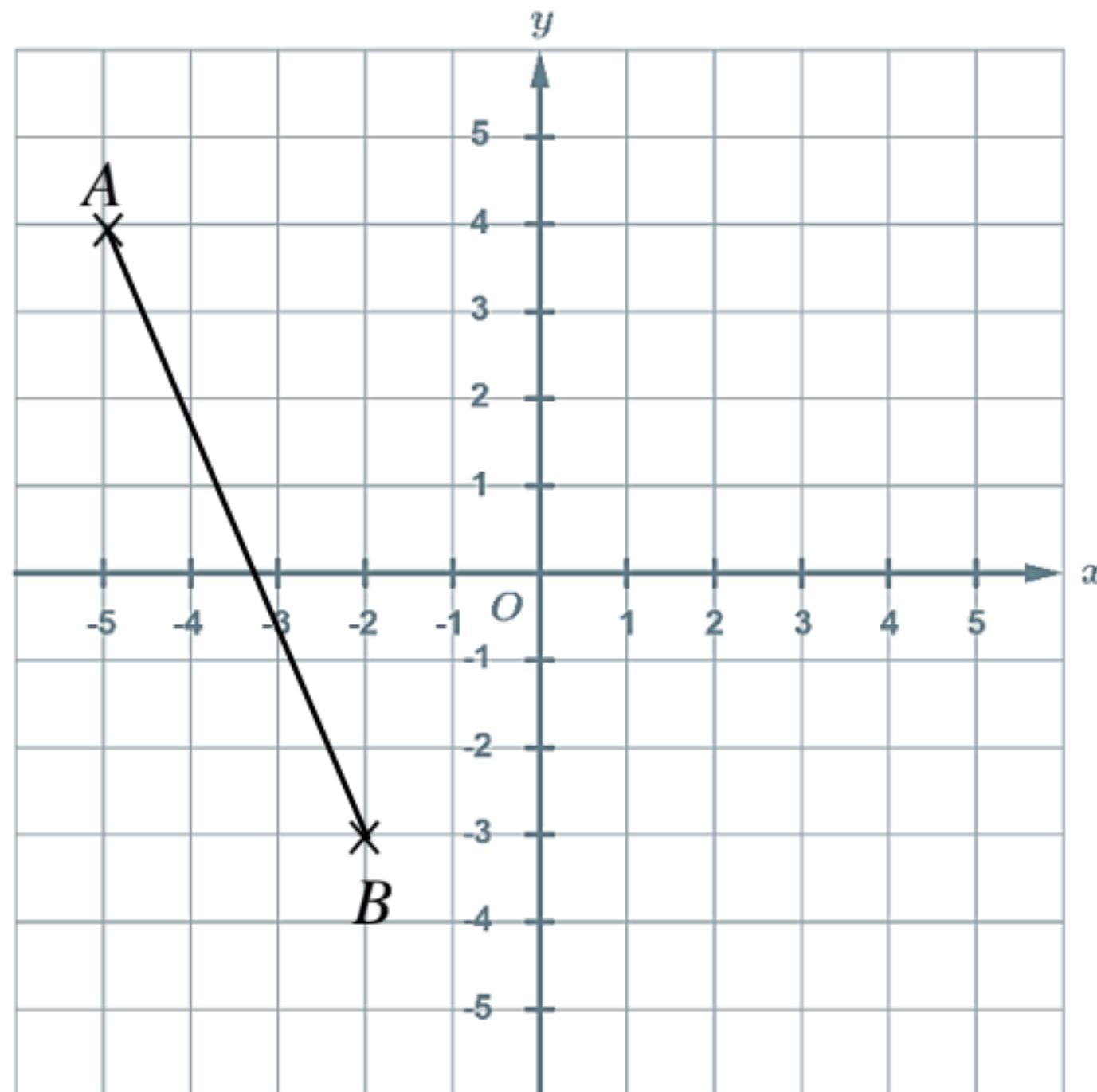


28. In the figure, $PQRS$ is a parallelogram and PS is parallel to the x -axis. Given that the area of $PQRS$ is 78 sq. units, find the coordinates of Q .



22. _____	2
23. _____	3
24. _____	3
25. (a) _____	1
(b) _____	2
26. _____	3
27. _____	3
28. _____	3
Subtotal:	/20

29. In the figure, AB is reflected with respect to the y -axis to $A'B'$ respectively. Find the area of $ABB'A'$.



29. _____

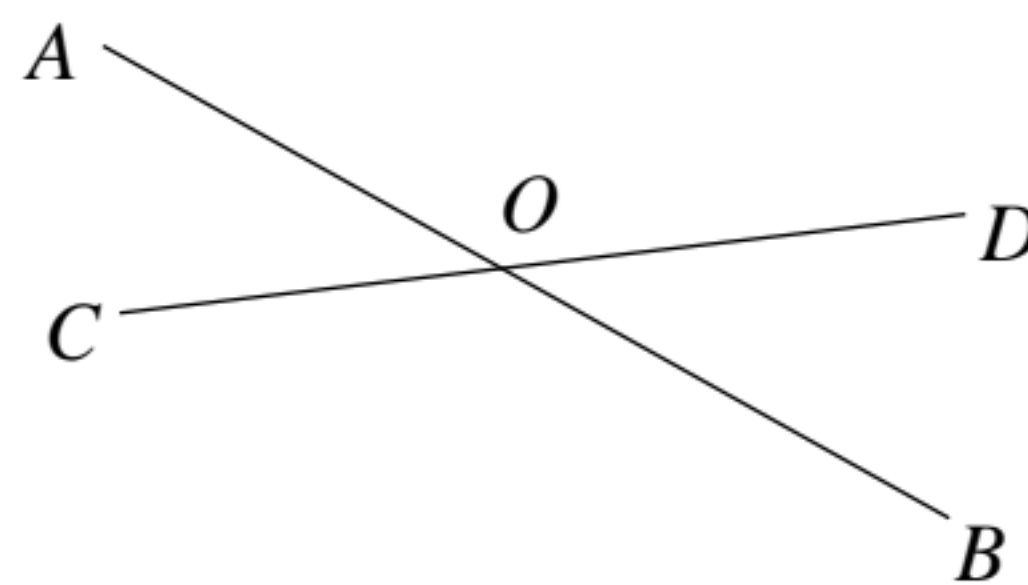
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30. $P(-3, 2)$ is translated rightward by 5 units and then rotated anticlockwise about the origin through 270° to point P' . Which quadrant of the rectangular coordinate plane does P' lie in?

30. _____

3

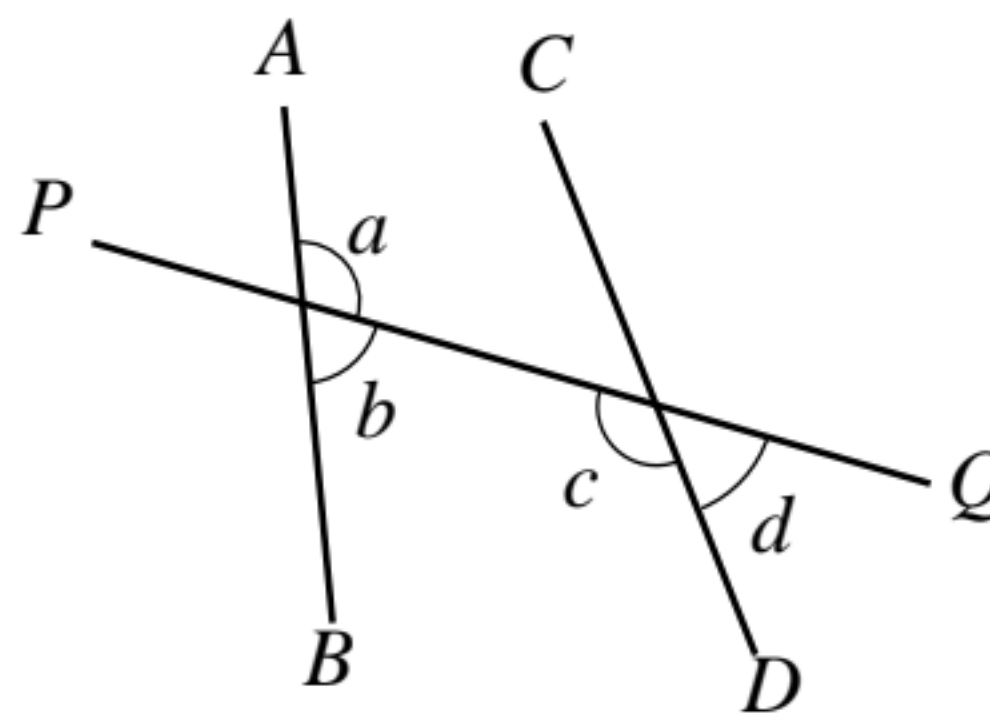
31. In the figure, AOB and COD are straight lines. Given $\angle AOD = 4\angle DOB$, find $\angle COB$.



31. _____

3

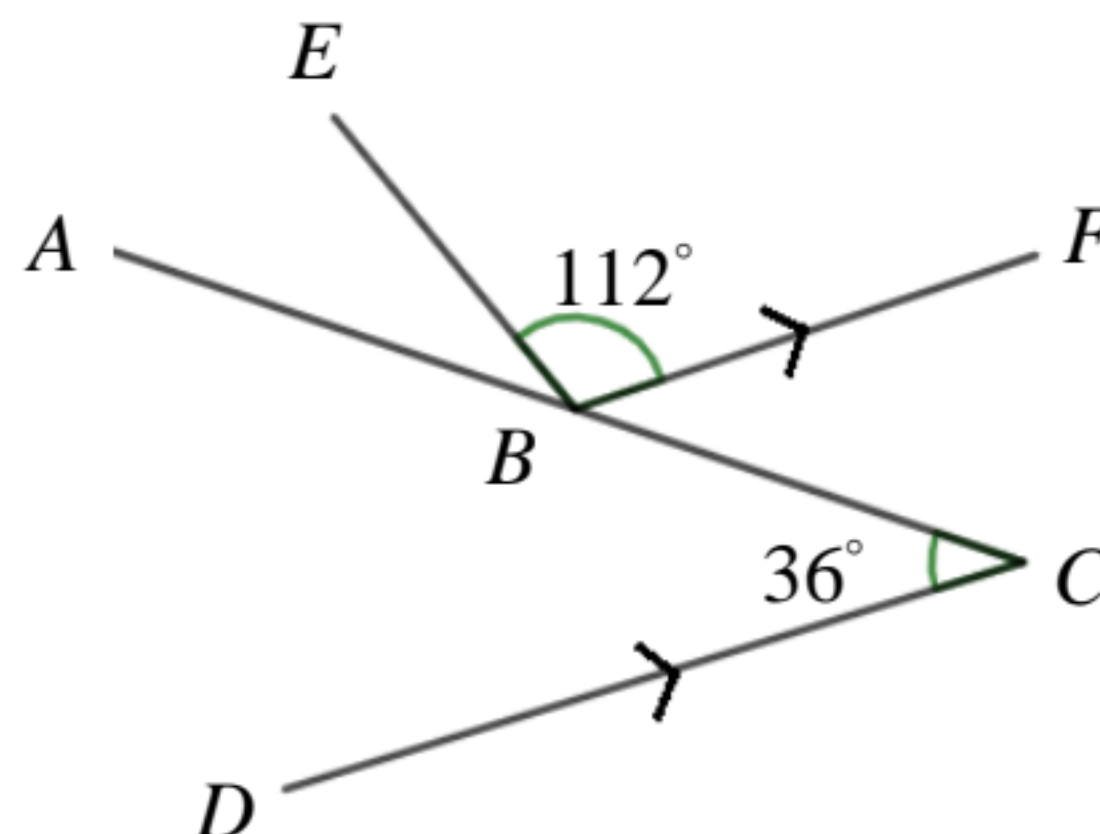
32. In the figure, PQ is a transversal. Which two angles are alternate angles?



32. _____

2

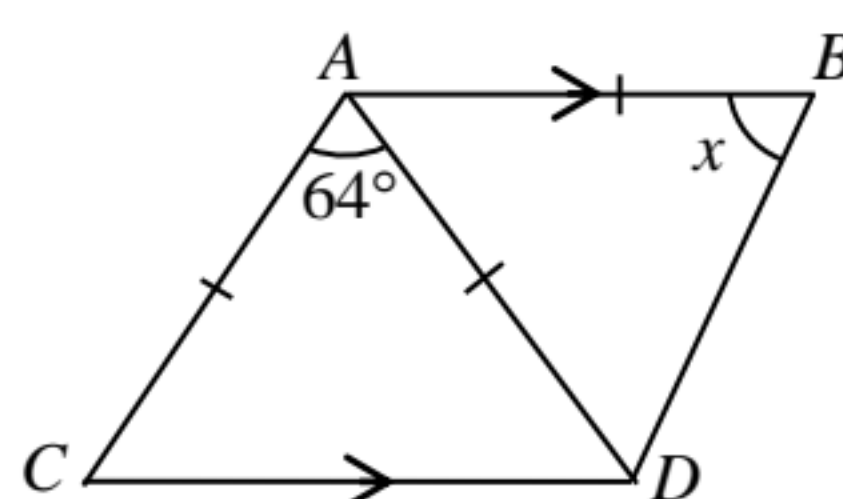
33. In the figure, ABC is a straight line and $BF \parallel DC$. Find $\angle EBA$.



33. _____

3

34. In the figure, $AB = AD = AC$ and $AB \parallel CD$. If $\angle CAD = 64^\circ$, find x .



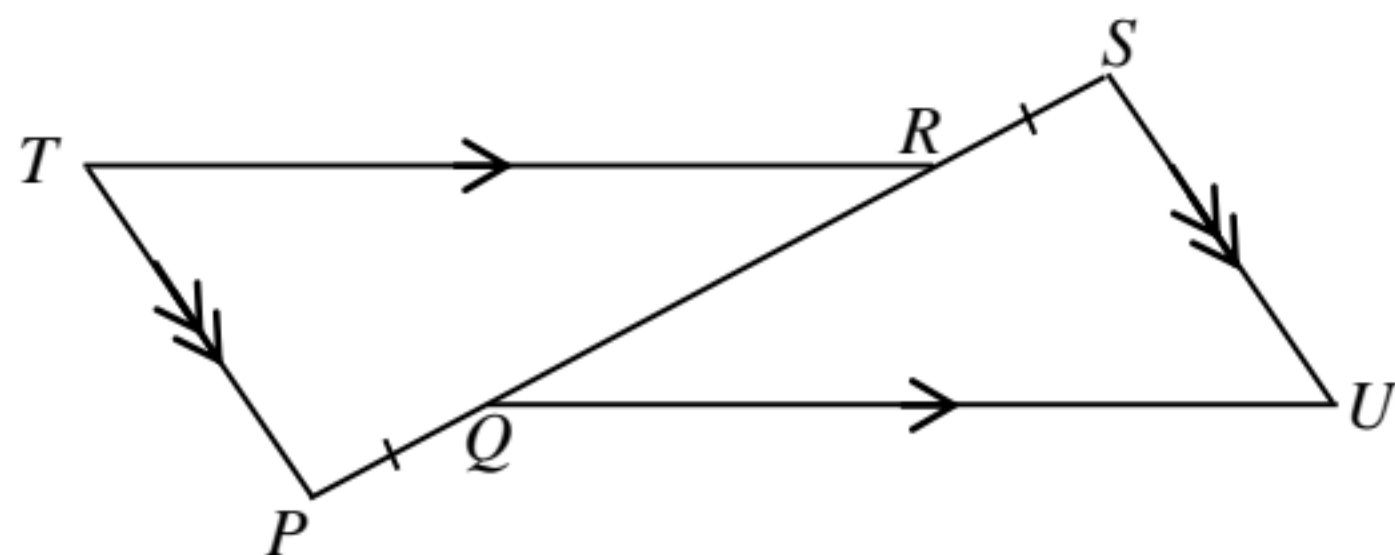
34. _____

2

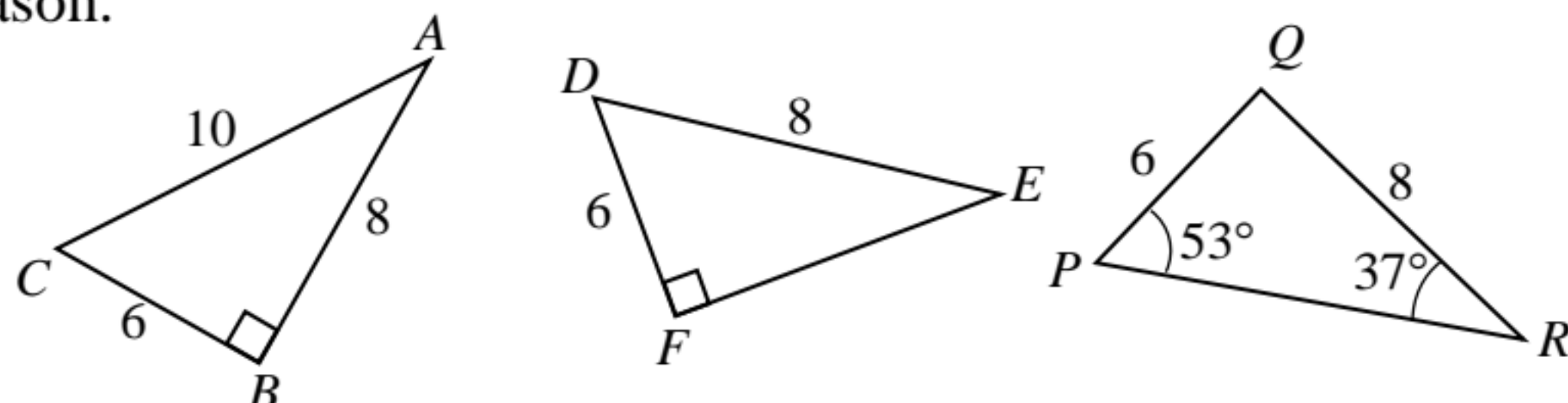
Subtotal:

/16

35. In the figure, $PQRS$ is a straight line. It is given that $TP \parallel SU$, $TR \parallel QU$ and $PQ = RS$. Name a pair of congruent triangles and give a reason.

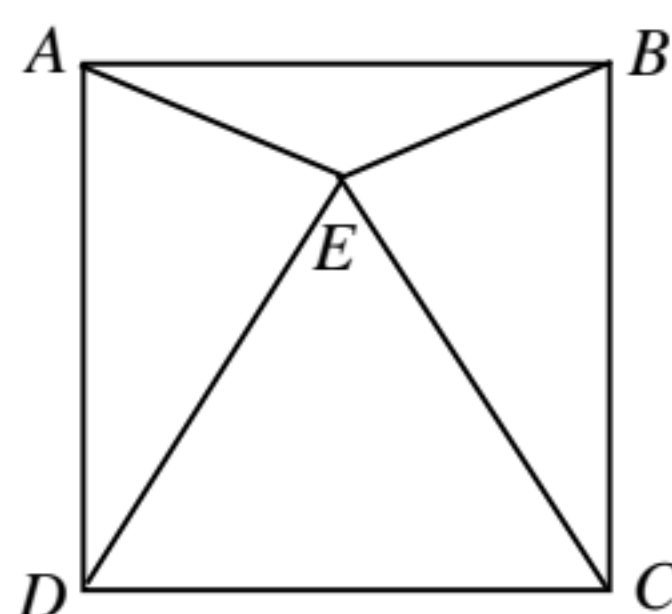


36. In the figure, name a pair of congruent triangles and give a reason.



37. In the figure, $ABCD$ is a square. It is given that $DE = CE$ and $\angle ADE = 36^\circ$. Which of the following statements must be true? (Circle the correct answers.)

- I. $\triangle ADE \cong \triangle BCE$
 II. $\triangle ADE$ is an isosceles triangle.
 III. $\angle DEC = 2\angle ADE$



35. _____	2
Reason: (_____)	1
36. _____	2
Reason: (_____)	1
37.	
I. Yes / No	1
II. Yes / No	1
III. Yes / No	1
Subtotal:	/9

– END OF PAPER –