

2. In Figure 2, find the values of $\angle 6$ and $\angle 7$, given that $m \parallel n$ and $\angle 1 = 115^\circ$.
3. In Figure 3, $AB \parallel CD$. EF intersects them at P and Q , respectively. If $\angle 1 = 130^\circ$, find all the other angles.

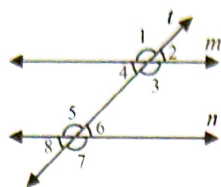


Fig. 2

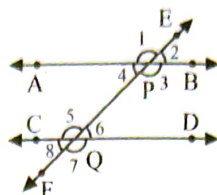


Fig. 3

4. In Figure 4, $p \parallel q$ and t is a transversal such that $\angle 1 = 135^\circ$. Find the measures of $\angle 2, \angle 3, \angle 4, \angle 5, \angle 6, \angle 7$ and $\angle 8$.
5. In Figure 5, $AB \parallel CD$ and PQ is the transversal. If $\angle 1 : \angle 2 = 3 : 2$, find the measure of all the angles from 1 to 8.

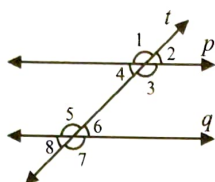


Fig. 4

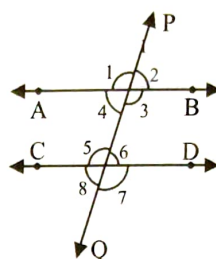


Fig. 5

6. In Figure 6, $AB \parallel CD$. If $\angle 1 = (3x - 10)^\circ$ and $\angle 7 = (5x - 30)^\circ$, find the measure of $\angle 1$ and $\angle 7$.

[Hint: $\angle 1 = \angle 3$ (vertically opposite angles) $\Rightarrow \angle 3 = (3x - 10)^\circ$.
 $\angle 3 = \angle 7$ (corresponding angles) $\Rightarrow 3x - 10 = 5x - 30$.]

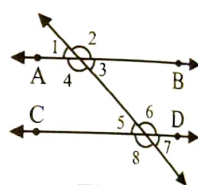


Fig. 6

7. In Figure 7a and 7b, $AB \parallel CD$. Determine the values of x, y and z .

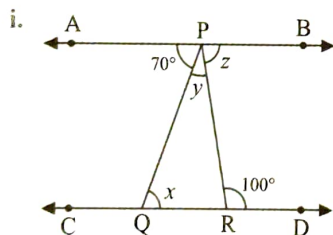


Fig. 7a

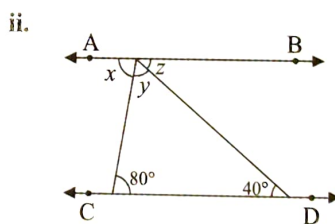


Fig. 7b

8. In Figure 8a and 8b, $AB \parallel CD$. Find the value of x .

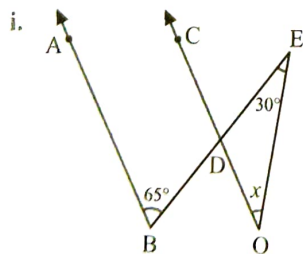


Fig. 8a

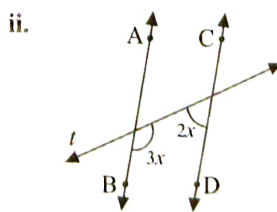


Fig. 8b

9. In Figure 9, $AB \parallel DH$ and $BC \parallel FG$. If $\angle ABC = 60^\circ$, find $\angle GFH$.
10. In Figure 10, $l \parallel m$ and $p \parallel q$. Find the measures of $\angle a$, $\angle b$, $\angle c$ and $\angle d$.

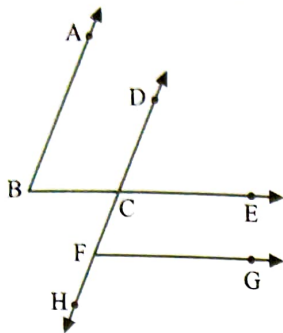


Fig. 9

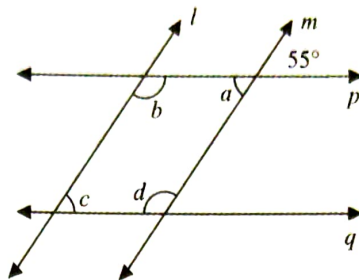


Fig. 10

11. In Figure 11, $l \parallel m$ and $p \parallel q$. If $a = 45^\circ$, find b .
12. In Figures 12a and 12b, lines l and m are cut by a transversal t . Find whether l is parallel to m or not.

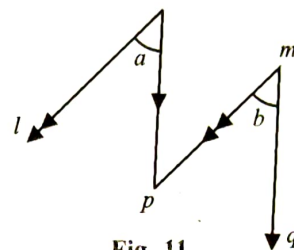


Fig. 11

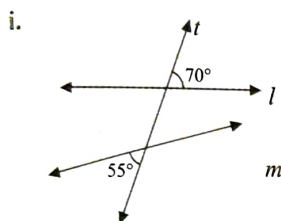


Fig. 12a

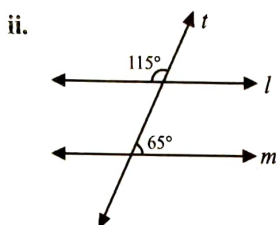


Fig. 12b

13. In Figure 13, PQRS is a quadrilateral in which $PQ \parallel SR$ and $PS \parallel QR$. Prove that $\angle SPQ = \angle SRQ$.

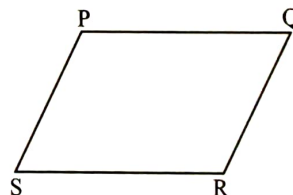


Fig. 13

14. In Figure 14, if $\angle x = \angle y$ and $\angle a = \angle b$, prove that $l \parallel n$.

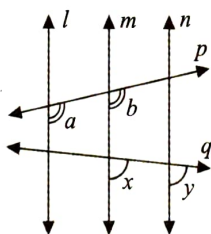


Fig. 14

In Figure 1, if $PQ \parallel ST$, $\angle PQR = 110^\circ$, and $\angle RST = 130^\circ$, find $\angle QRS$.
[Hint: Produce PQ to intersect SR at X.]

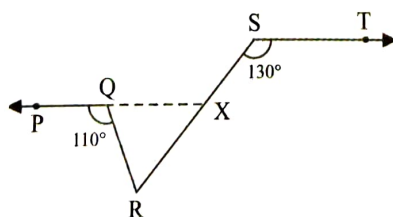


Fig. 1

•• Higher order thinking

HOTS

1. The hypotenuse of a right triangle is 65 cm. If one of its sides is 60 cm, find the length of the other side.
2. The sides of a triangle are 3 cm, 4 cm and 6 cm. Determine if it is a right-angled triangle.
3. A man goes 7 m due north and then 24 m due east. How far is he from the starting point?
4. A ladder 5 m long reaches a window of a house 4 m above the ground. Determine the distance of the foot of the ladder from the house.
5. A ladder is placed in such a way that its foot is at a distance of 3 m from a wall and its top reaches a window 4 m above the ground. Determine the length of the ladder.
6. A ladder 17 m long reaches a window which is 8 m above the ground on one side of a street keeping its foot at the same point, the ladder is turned to the other side of the street to reach a window 15 m high. Find the width of the street.
7. ABC is an isosceles triangle with $AC = BC$. If $AB^2 = 2AC^2$, prove that ABC is a right triangle.
8. A right-angled triangle is isosceles. If the square of the hypotenuse is 50 units, what is the length of each of its legs?
9. Find the perimeter of a rectangle whose width is 5 cm and diagonal is 13 cm.
10. The length of a picture frame is 80 cm and its diagonal is 100 cm. Find its perimeter.

1. For what value of k does $\{10, k, 26\}$ form a Pythagorean triplet?
2. Find the values of x and y in Fig. 1.

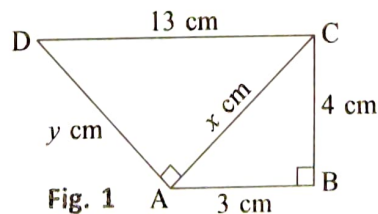


Fig. 1

•• Higher order thinking

