

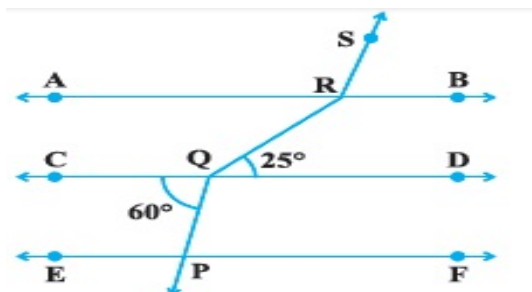
QUESTION BANK

CHAPTER: LINES AND ANGLES

CLASS:IX

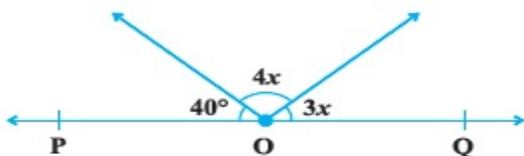
Q1. Multiple Choice Questions:

1. In the given figure, if $AB \parallel CD \parallel EF$, $PQ \parallel RS$, $\angle RQD = 25^\circ$ and $\angle CQP = 60^\circ$, then $\angle QRS = ?$



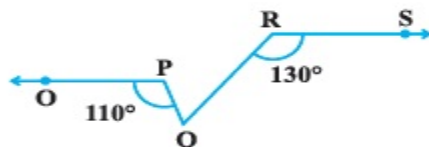
- a. 85° b. 135° c. 145° d. 110°
2. The angles of a triangle are in the ratio of 5:3:7. The triangle is a
- a. An acute angled Δ b. An obtuse angled Δ c. a right Δ d. An isosceles Δ
3. An exterior angle of a triangle is 105° and its two interior opposite angles are equal. Each of these angles is
- a. $37\frac{1}{2}^\circ$ b. $52\frac{1}{2}^\circ$ c. $72\frac{1}{2}^\circ$ d. 75°
4. If one angle of a triangle is equal to the sum of other two angles then the triangle is
- a. an isosceles Δ b. An obtuse Δ c. An equilateral Δ
- d. A right Δ
5. If one of the angles of a triangle is 130° , then the angle between the bisectors of the other two angles can be
- a. 50° b. 65° c. 145° d. 155°
6. The angles of a triangle are in the ratio of 2:4:3. The smallest angle of the triangle is
- a. 40° b. 60° c. 80° d. 20°

7. If given figure, POQ is a given line. The value of x is



- a. 20° b. 25° c. 30° d. 35°

8. In the given figure, $OP \parallel RS$, $\angle OPQ = 110^\circ$ and $\angle QRS = 130^\circ$, then $\angle PQR = ?$

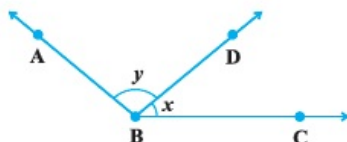


- a. 40° b. 50° c. 60° d. 70°

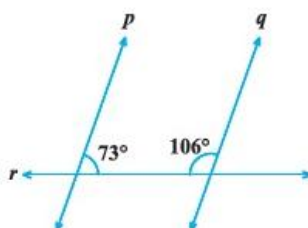
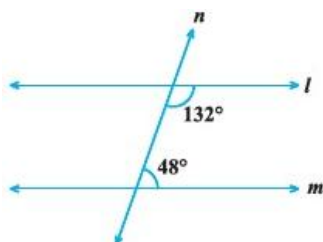
(PROFICIENCY TEST)

Q2. Answer Questions with reasoning

- Find the angle which is half of its complement.
- Determine the angle $\frac{1}{5}$ of its supplement
- For what two value of $x + y$ in given figure will ABC be a line? Justify your statement? Justify your answer.

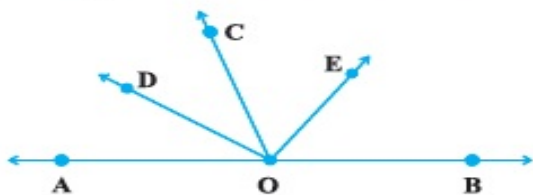


- Can a triangle have all angles less than 60° . Give reason.
- Can a triangle have two obtuse angles? Explain.
- Two adjacent angles are equal. Is it necessary that each of these angles will be a right angle? Justify.
- If one of the angles formed by two intersecting lines is a right angle, what can you say about other three angles? Give reason for your answer.
- Consider a polygon with three of its angles as 45° , 64° and 72° . How many triangles can be drawn using these measurements? Give reason for your answer.
- Which of the two lines are parallel? Why?

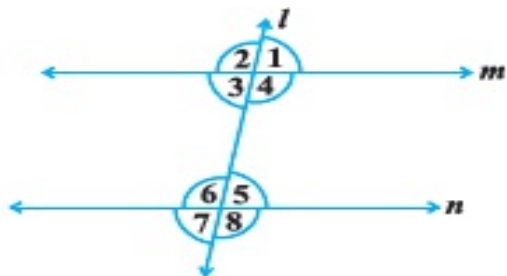


10. Two lines l and m are perpendicular to each other? Give reason for your answer.

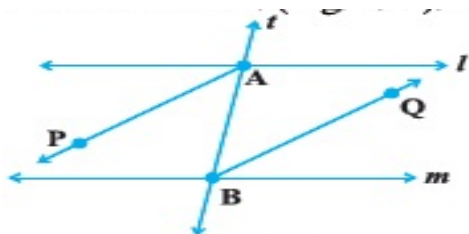
11. In the given figure, OD is the bisector of $\angle AOC$, OE is the bisector of $\angle BOC$ and $OD \perp OE$. Show that the points A, O and B are collinear.



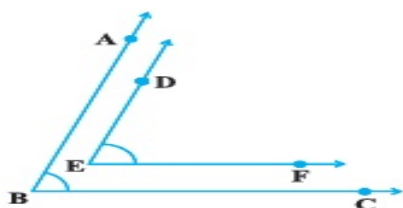
12. In the figure shown, if $\angle 1 = 60^\circ$ and $\angle 6 = 120^\circ$. Show that the lines l and m are parallel.



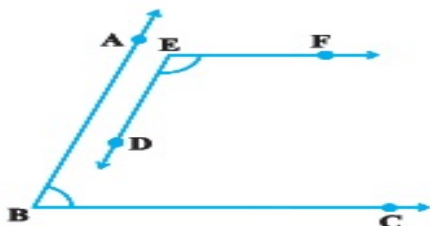
13. AP and BQ are the bisectors of the two alternate angles formed by the intersection of a transversal t with parallel lines l and m . Show that $AP \parallel BQ$.



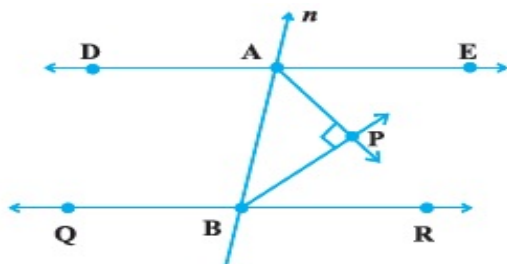
14. If $BA \parallel ED$ and $BC \parallel EF$, show that $\angle ABC = \angle DEF$.



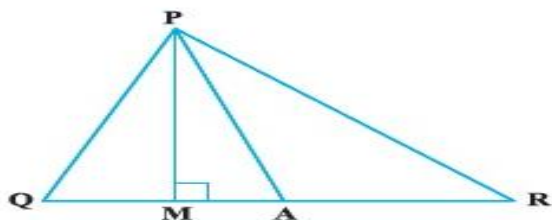
15. In the given figure if $BA \parallel ED$ and $BC \parallel EF$, show that $\angle ABC + \angle DEF = 180^\circ$.



16. In the given figure, $DE \parallel QR$ and AP and BP are $\angle EAB$ and $\angle RBA$, respectively. Find $\angle APB$.



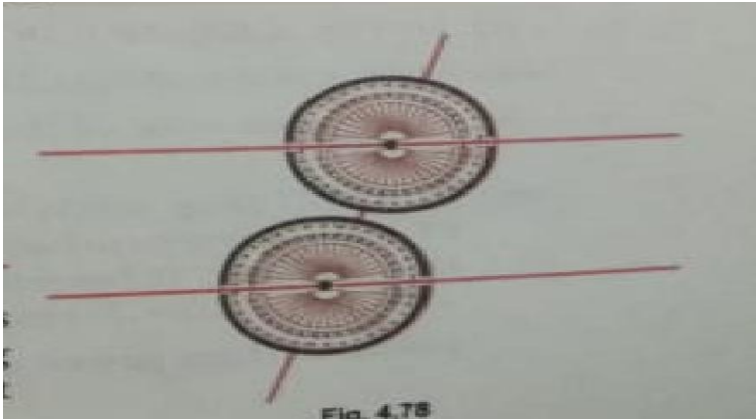
17. A triangle ABC is right angled at A . L is a point on BC such that $AL \perp BC$. Prove that $\angle BAL = \angle ACB$.
18. The angles of a triangle are in the ratio $2 : 3 : 4$. Find the angles of the triangle.
19. Two lines are respectively perpendicular to two parallel lines. Show that they are parallel to each other.
20. Prove that a triangle must have at least two acute angles.
21. If two lines intersect, prove that the vertically opposite angles are equal.
22. Prove that through a given point, we can draw only one perpendicular to a given line. (Use Contradiction method)
23. Prove that two lines that are respectively perpendicular to two intersecting lines intersect each other. (Use Contradiction method)
24. In the given figure, $\angle Q > \angle R$, PA is the bisector of $\angle QPR$ and $PM \perp QR$. Prove that $\angle APM = \frac{1}{2}(\angle Q - \angle R)$



25. Write three applications of “Angle sum property of a triangle”

Q3. Activity based question

1. Take three strips of cardboard and join them as shown in the figure. Fix two 360° protractors on the joining points. Mark them as angles 1, 2, 3, 4, 5, 6, 7 and 8. Measure the angles formed at different positions of the two strips. Record the measurement and verify the different properties related to transversal and parallel lines.



Readings	$\angle 1$	$\angle 2$	$\angle 3$	$\angle 4$	$\angle 5$	$\angle 6$	$\angle 7$	$\angle 8$
1								
2								
3								

2. Draw at least three triangles and measure their angles. Verify angle sum property for all the triangles

Triangle	$\angle 1$	$\angle 2$	$\angle 3$	sum of all the angles
1				
2				
3				