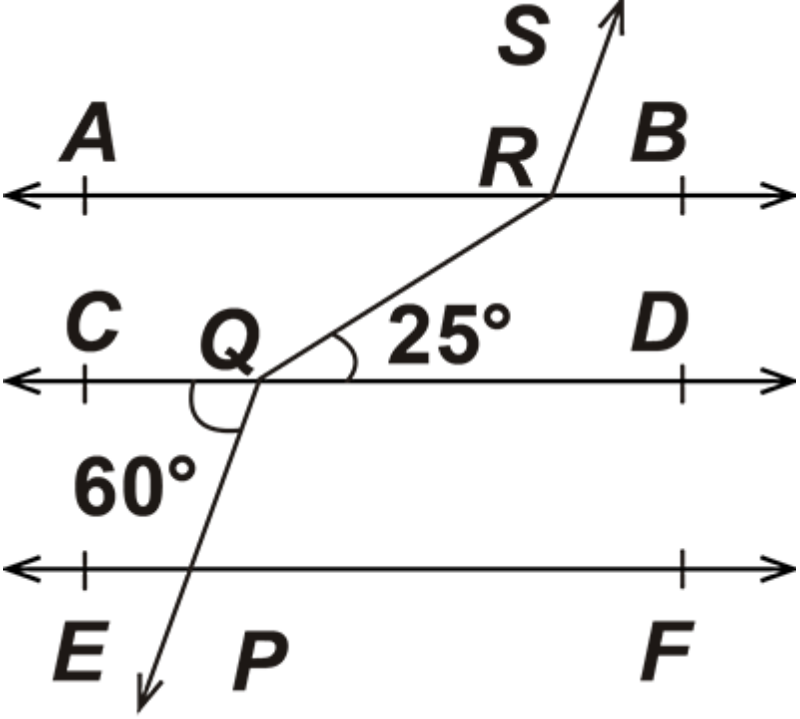
MATHS

BOOKS - NCERT MATHS (HINGLISH)

LINES AND ANGLES

Lines And Angles

1. In figure, if AB || CD || EF, PQ || RS, $\angle$ RQD $=25^\circ$ and $\angle$ CQP $=60^\circ$, then $\angle$QRS is equal to



A. 85°

B. 135°

C. 145°

D. 110°

Answer: C

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2. If one angle of a triangle is equal to the sum of the other two angles, then the triangle is

A. an isosceles triangle

B. an obtuse triangle

C. an equilateral triangle

D. a right triangle

Answer: D

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3. An exterior angle of a triangle is 105° and its two interior opposite angles are equal. Each of these equal angles is

A. $37\frac{1}{2}\circ$

B. $52\frac{1}{2}\circ$

C. $72\frac{1}{2}\circ$

D. 75°

Answer: B

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4. If the angles are in the ratio $5:3:7,$ then the triangle is

A. an acute angled triangle

B. an obtuse angled triangle

C. a right angled triangle

D. an isosceles triangle

Answer: B

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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°

Answer: D

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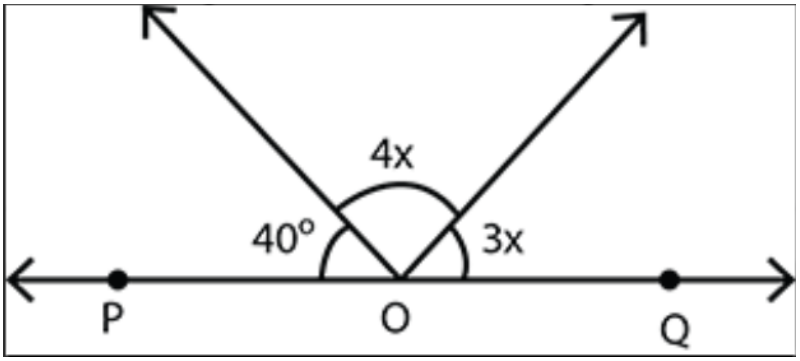
6. In the figure, POQ is a line. The value of x is



A. 20°

B. 25°

C. 30°

D. 35°

Answer: A

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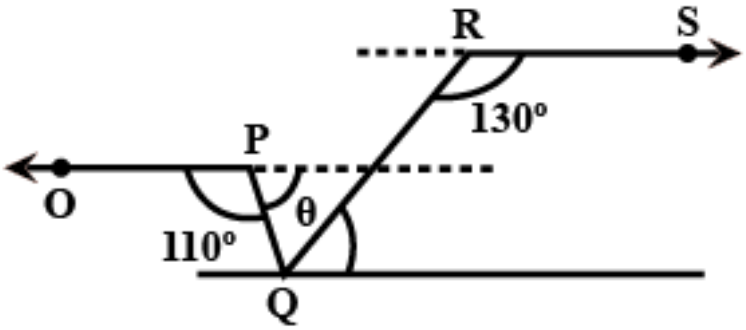
7. In the given figure, if $OP||Rs, \angle OPQ = 110^\circ$ and $\angle QRS = 130^\circ, then \angle PQR$ is equal to



A. 40°

B. 50°

C. 60°

D. 70°

Answer: C

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8. Angles of a triangle are in the ratio $2:4:3$. The smallest angle of the triangle is

A. 60°

B. 40°

C. 80°

D. 20°

Answer: B`

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9. For what value of x + y in figure will ABC be a line? Justify your answer.

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10. Can a triangle have all angles less than 60°? Given reason for your answer.

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11. Can a triangle have two obtuse angles ? Give reason for your answer.

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12. How many triangles can be drawn having its angles as $45^\circ, 64^\circ$ and 72°? Give reason for your answer.

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13. How many triangles can be drawn having its angles as $53^\circ, 64^\circ$ and 63°? Give reason for your answer.

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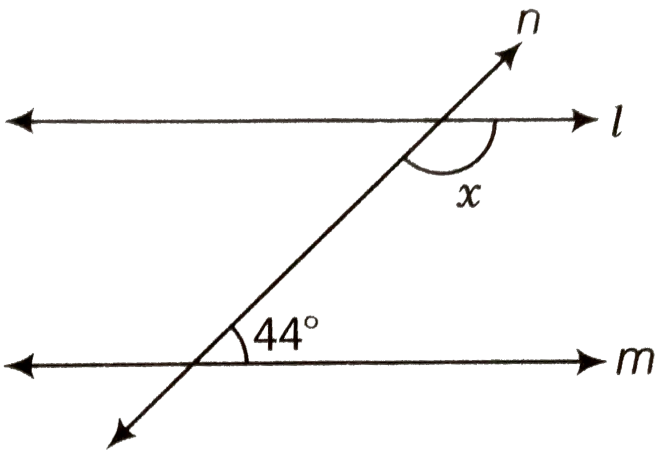
14. In the figure, find the value of x for which the lines l and m are parallel.



A. 120°

B. 126°

C. 136°

D. 140°

Answer: C

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15. Two adjacent angles are equal. Is it necessary that each of these angles will be a right angles ? Justify your answer.

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16. If one of the angles by two intersecting lines is a right angles, what can you say about the other three angles ? Give reason for your answer.

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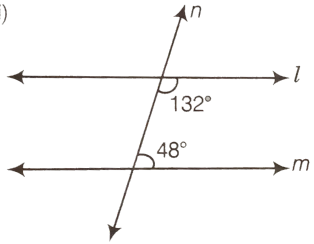
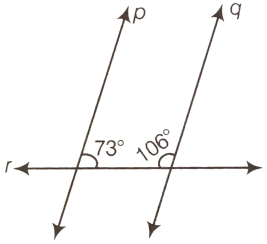
17. In the figure, which of the two lines are parallel and why ?

(i)



(ii)



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18. Two lines l and m , are perpendicular to the same line n. Are l and m perpendicular to each other? Give reason for your answer.

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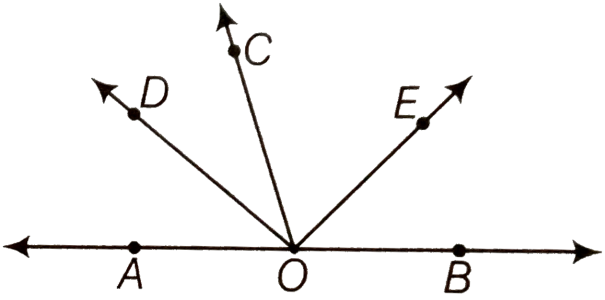
19. In the figure, OD is the bisector of $\angle AOC$, OE is the bisector of $\angle BOC$ and OD $\perp$ OE. Show that the points

A, O and B are collinear.



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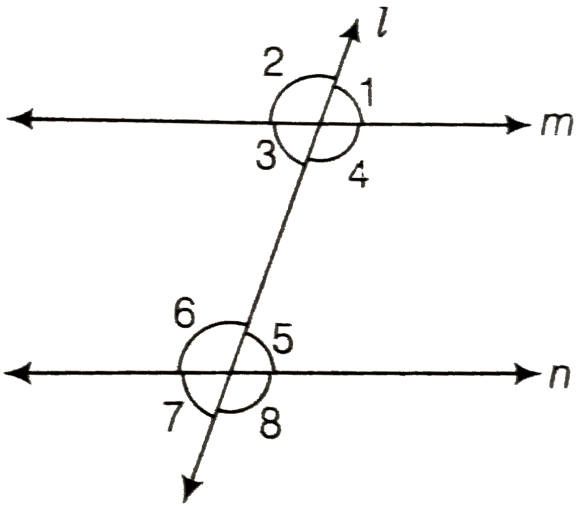
20. In the figure, $\angle 1 = 60^\circ$ and $\angle 6 = 120^\circ$ Show that the lines m and n are parallel.



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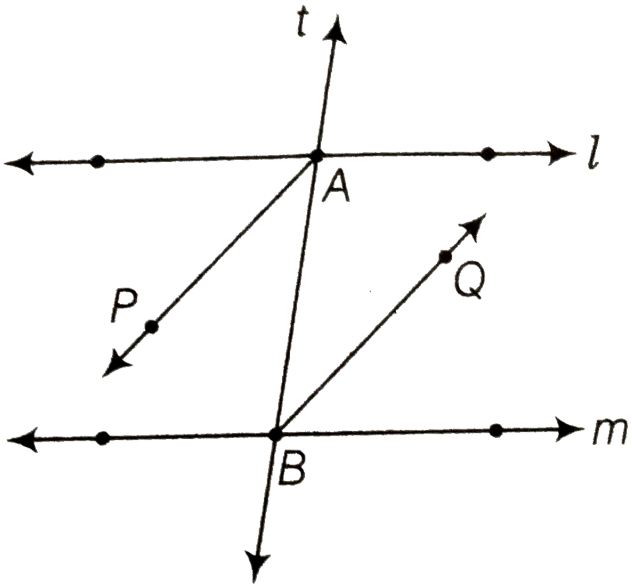
21. AP and BQ are the bisectors of the two alternate interior angles formed by the intersection of a transversal t with parallel lines l and m (in the given

figure). Show that $AP||BQ$.



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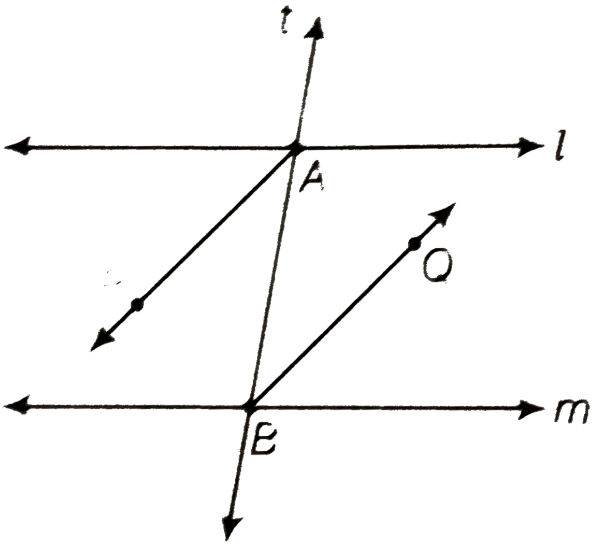
22. In the given figure, bisectors AP and BQ of the alternate interior angles are parallel, then show that l ||

m.



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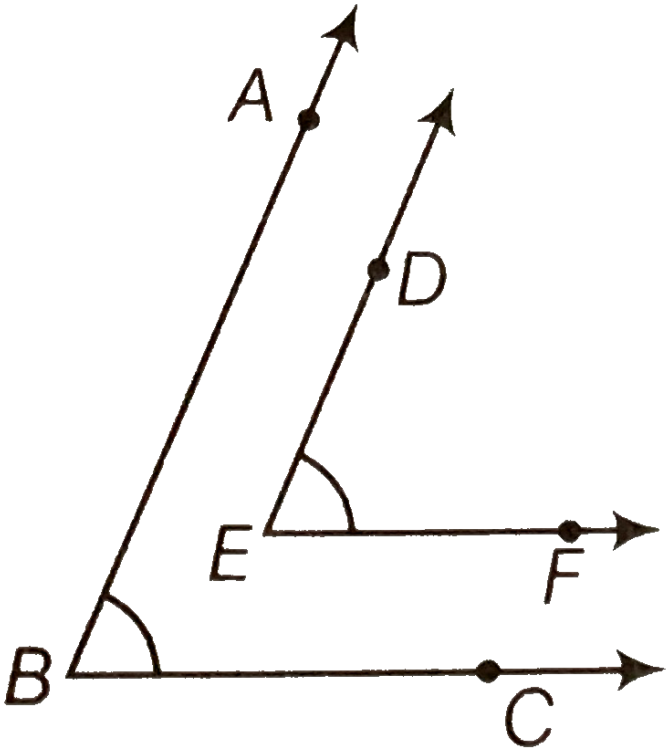
23. In the figure, BA|| ED and BC|| EF. Show that ∠ABC = ∠DEF.



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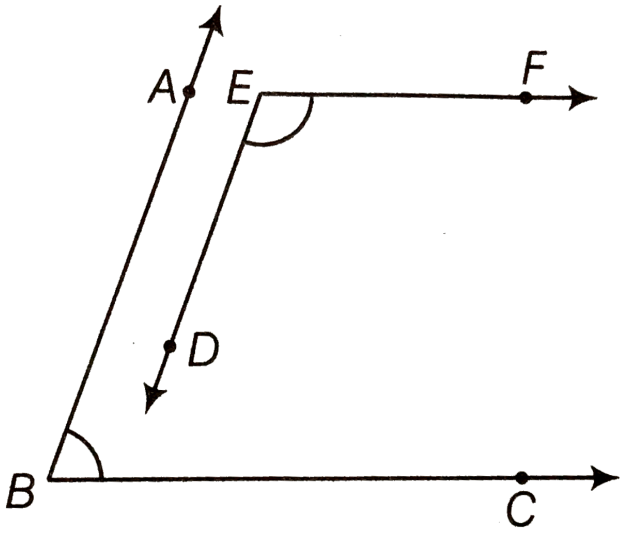
24. In the figure, BA $||$ ED and BC $||$ EF. Show $\angle ABC + \angle DEF = 180^\circ$.



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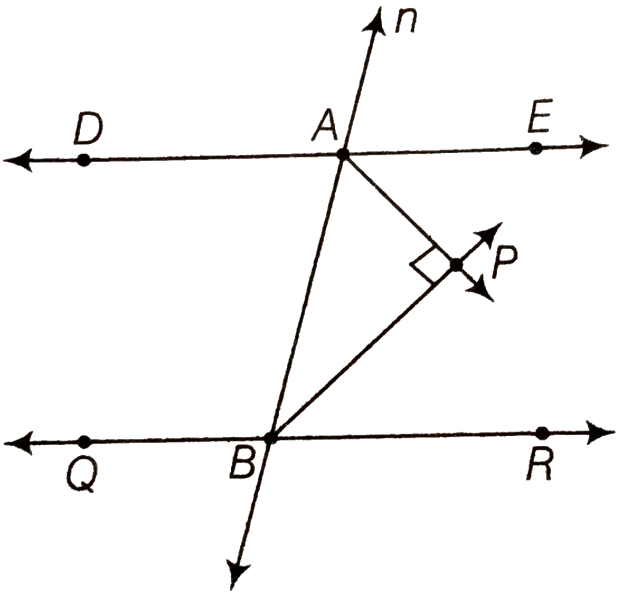
25. In the figure, DE|| QR and BP are bisectors of ∠EAB and ∠RBA, respectively. Find ∠APB.



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26. A Δ ABC is right angled at A. L is a point on BC such that AL $\perp$ BC. Prove that $\angle BAL = \angle ACB$.

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27. Two lines are respectively perpendicular to two parallel lines. Show that they are parallel to each other.

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28. If two lines intersect prove that the vertically opposite angles are equal

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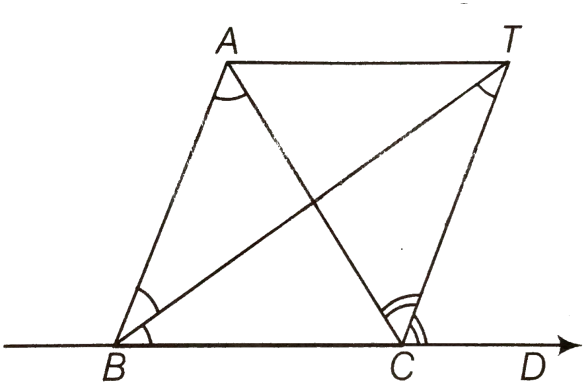
29. Bisectors of interior $\angle$B and exterior $\angle$ACD of a Δ ABC intersect at the point T. prove that $\angle BTC = \frac{1}{2}\angle$

BAC.



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30. A transversal intersects two parallel lines. Prove that the bisectors of any pair of corresponding angles so formed are parallel.

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31. Prove that through a given point, we can draw only one perpendicular to a given line.

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32. Prove that two lines that are respectively perpendicular to two intersecting lines intersect each other .

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33. prove that triangle must have atleast two acute angle

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34. In Figure PS is the bisector of $\angle QPR$ and $PT \perp QR$. Show that $\angle TPS = \frac{1}{2}(\angle Q - \angle R)$

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