



MATHS

BOOKS - NCERT MATHS (ENGLISH)

LINES AND ANGLES

Multiple Choice Questions

1. In figure, if $AB \parallel CD \parallel EF$, $PQ \parallel RS$, $\angle RQD = 25^\circ$ 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 $OP \parallel RS$, $\angle OPQ = 110^\circ$ 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° , 64° and 72° ? Give reason

for your answer.



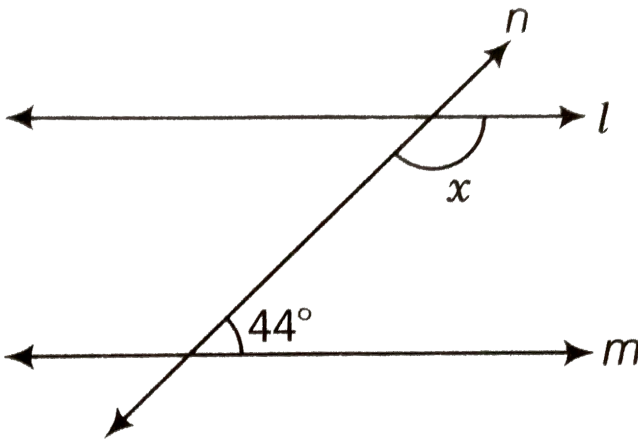
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13. How many triangles can be drawn having its angles as 53° , 64° and 63° ? Give reason for your answer.



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



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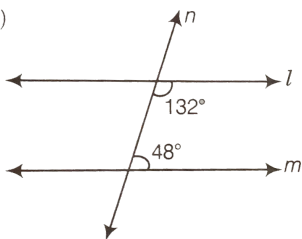
16. If one of the angles by two intersecting lines is a right angles, what can you say about the other three angles ? Give reason for your answer.



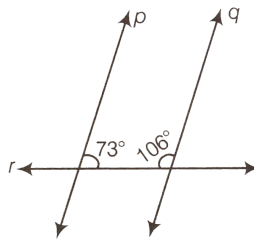
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17. In the figure, which of the two lines are parallel and why ?

(i)



(ii)





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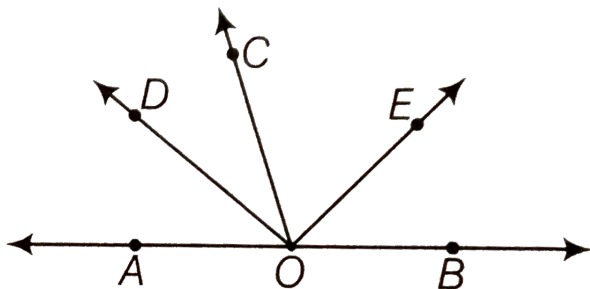
18. Two lines l and m , are perpendicular to the same line n . Are l and m perpendicular to each other? Give reason for your answer.



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

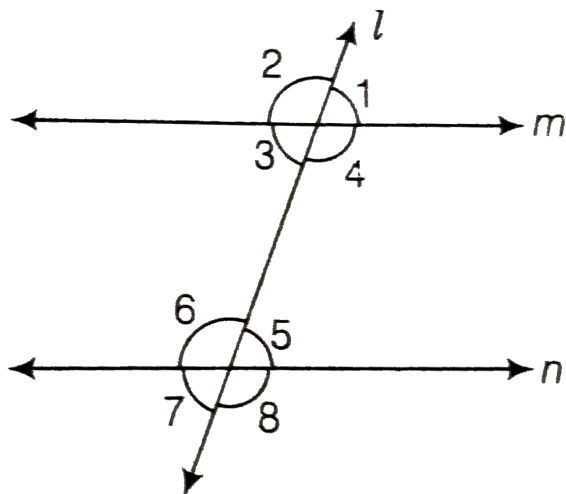
Show that the points A , O and B are collinear.



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20. In the figure, $\angle 1 = 60^\circ$ and $\angle 6 = 120^\circ$

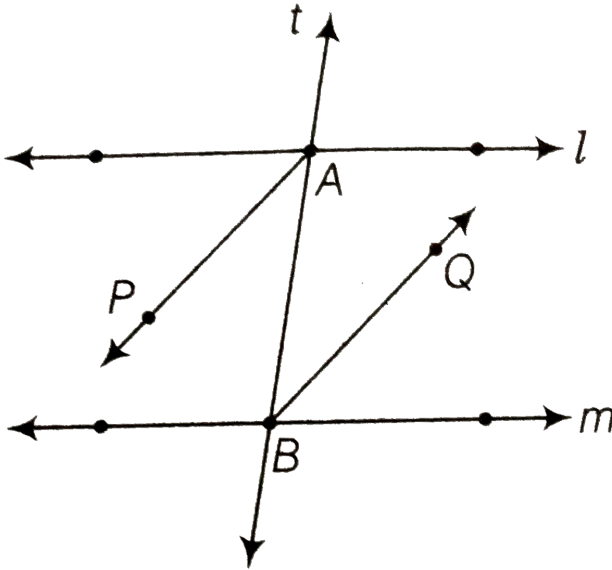
Show that the lines m and n are parallel.



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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

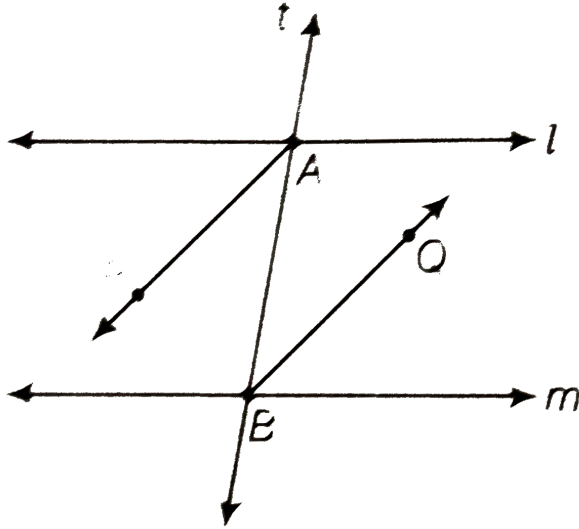
$AP \parallel BQ$.



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22. In the given figure, bisectors AP and BQ of the alternate interior angles are parallel,

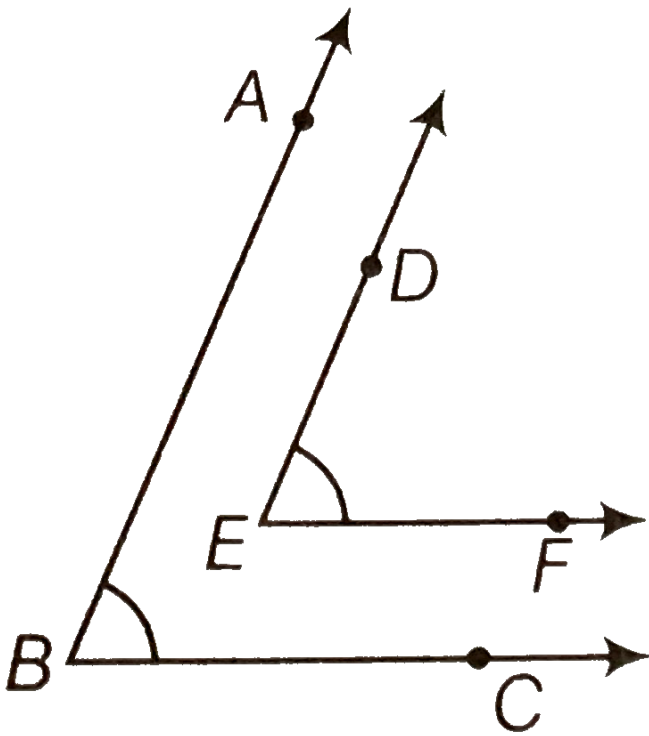
then show that $l \parallel m$.



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23. In the figure, $BA \parallel ED$ and $BC \parallel EF$. Show that

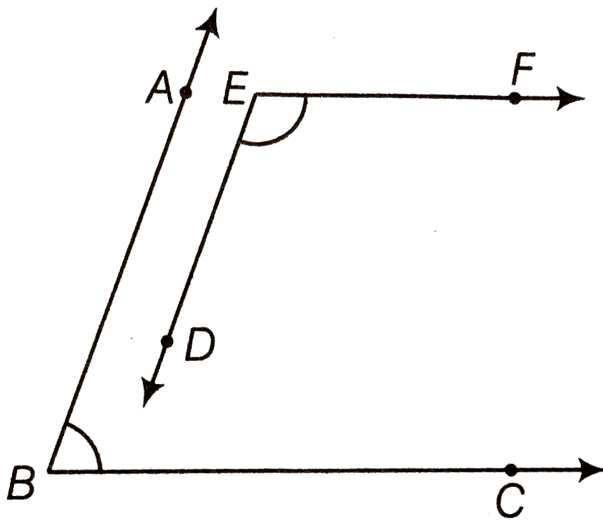
$$\angle ABC = \angle DEF.$$



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24. In the figure, $BA \parallel ED$ and $BC \parallel EF$. Show

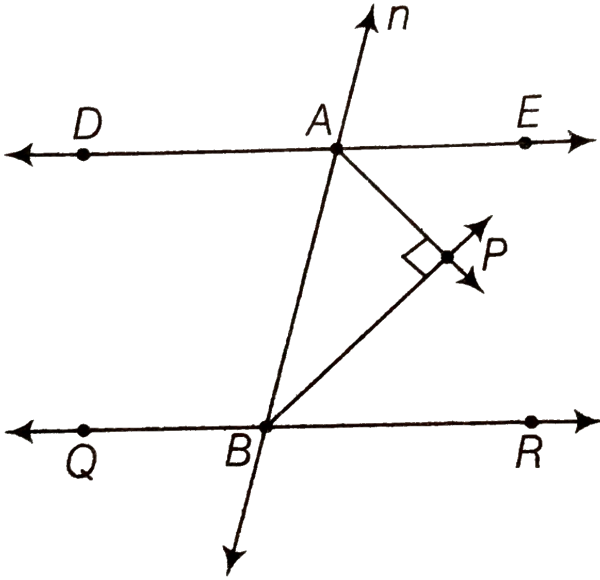
$$\angle ABC + \angle DEF = 180^\circ.$$



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25. In the figure, $DE \parallel QR$, AP and BP are bisectors of $\angle EAB$ and $\angle RBA$, respectively.

Find $\angle APB$.



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



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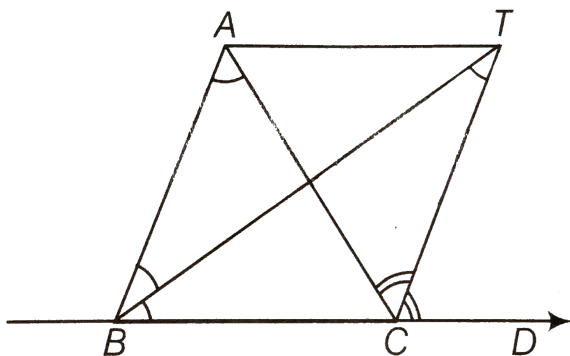
28. If two lines intersect prove that the vertically opposite angles are equal



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29. Bisectors of interior $\angle B$ and exterior $\angle ACD$ of a $\triangle ABC$ 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. If 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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