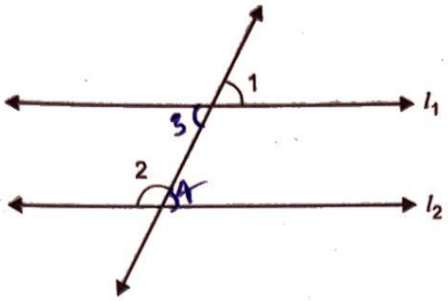
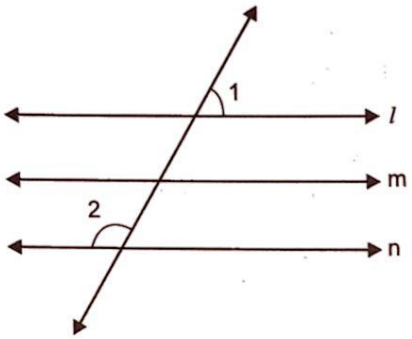
Exercise 12.4

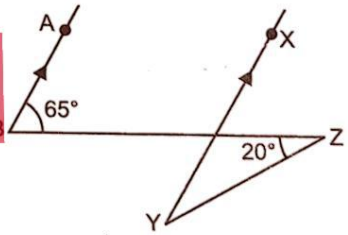
1. In the given figure, $l_1 \parallel l_2$ and $\angle 1 = 65°$, then $\angle 2 =$ .....



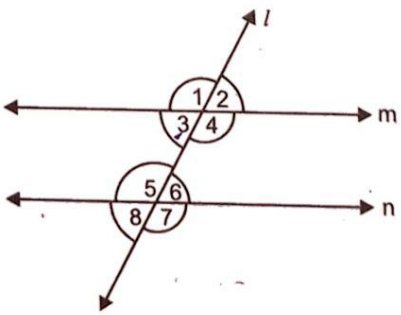
2. In the given figure, if l, m and n parallel lines and $\angle 1 = 60°$, then $\angle 2 =$ .....



3. In the given figure, AB || XY, $\angle ABZ = 65°$, $\angle BZY = 20°$. Calculate $\angle XYZ$.



4. In the given figure, $m \parallel n$.

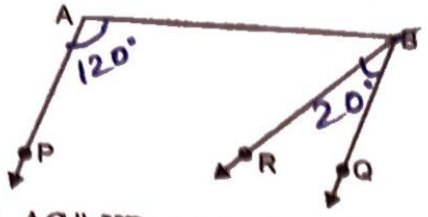


If (i) $\angle 2 = (120 - 2x)°$ and $\angle 6 = (3x)°$, find $\angle 2$ and $\angle 6$.

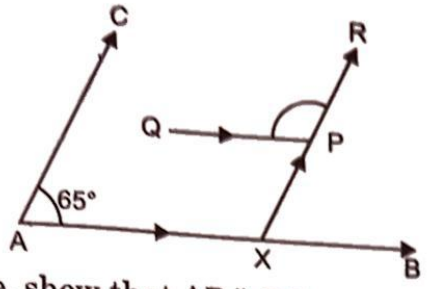
(ii) $\angle 1 = (5x - 20)°$ and $\angle 7 = (2x + 10)°$, find $\angle 1$ and $\angle 7$.

(iii) the ratio of $\angle 4$ and $\angle 8$ is 2 : 3, find the measure of $\angle 4$ and $\angle 8$.

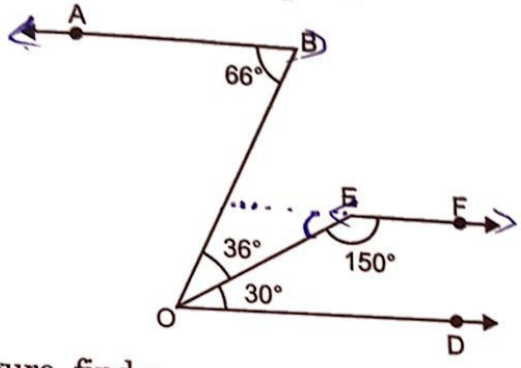
5. In the given figure, AP || BQ, $\angle PAB = 120°$, $\angle RBQ = 20°$. Find $\angle ABR$.



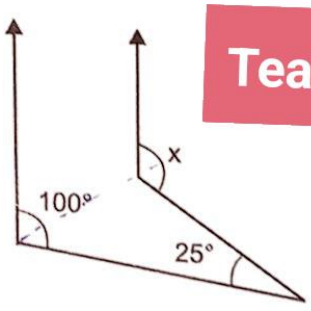
6. In the given figure, AC || XR, QP || AB, $\angle CAX = 65°$, find $\angle QPR$.



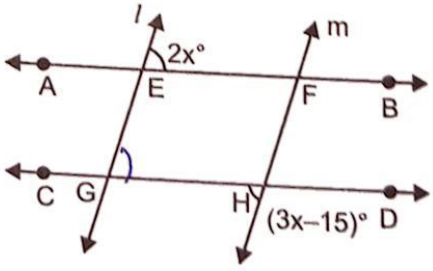
7. In the given figure, show that AB || EF.



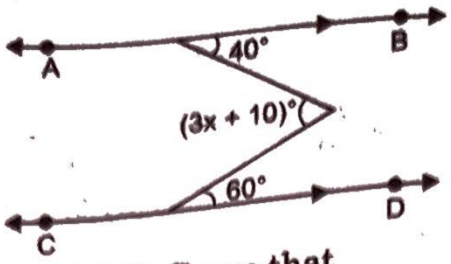
8. In the given figure, find x.



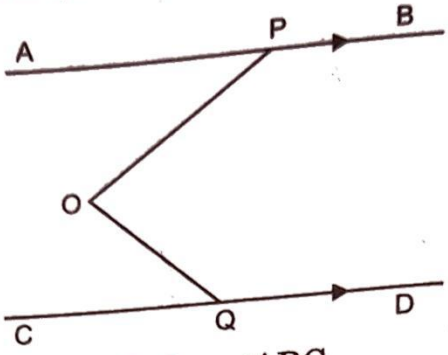
9. In the given figure, l || m. Find the value of x so that the lines AB and CD are parallel.



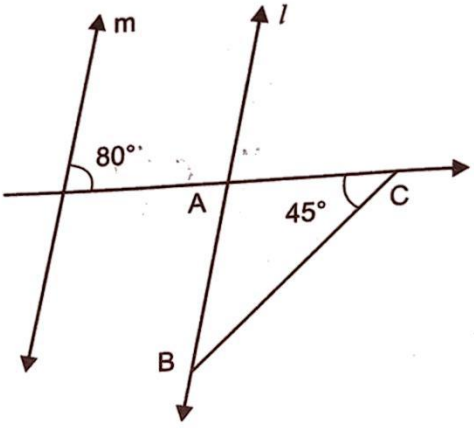
10. In the given figure, find the value of x.



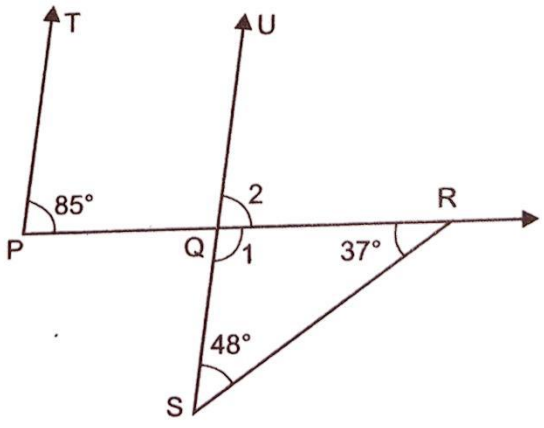
11. In the given figure, AB || CD. Prove that $\angle BPO + \angle POQ + \angle DQO = 4$ right angles.



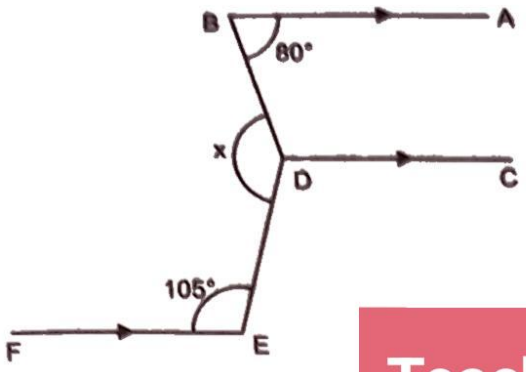
12. In the given figure, $l \parallel m$, find $m\angle ABC$.



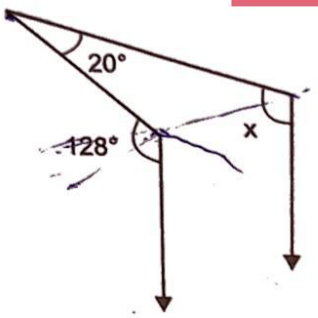
13. In the given figure, prove that TP || QU.



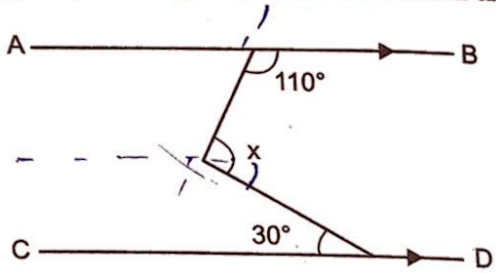
14. In the given figure, find the value of x.



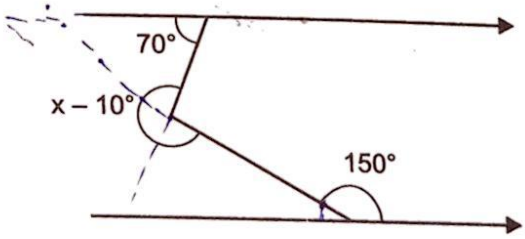
15. In the given figure, find x.



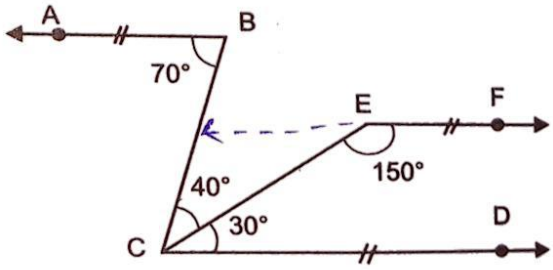
16. In the following figure, AB is parallel to CD. Find the value of x in degrees.



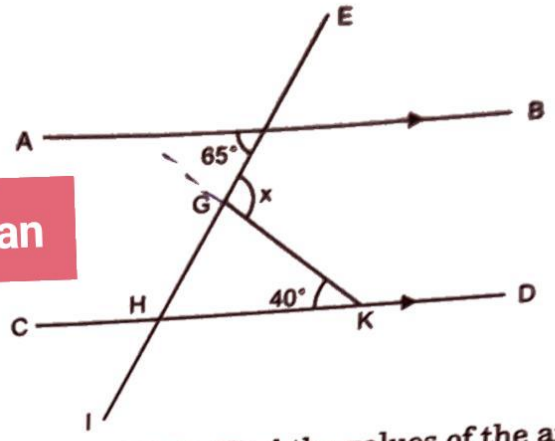
17. In the given figure, find the value of x in rt. angles.



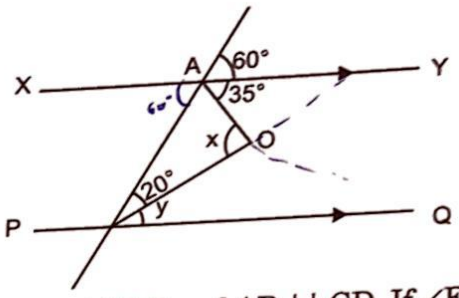
18. In the given figure, show that AB || CD.



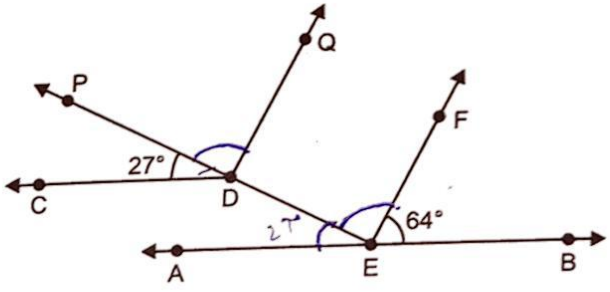
19. In the given figure, AB is parallel to CD. Find the value of x in degrees.



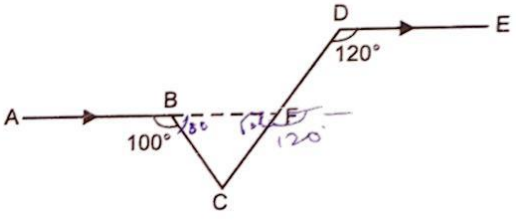
20. In the given figure, XY || PQ. Find the values of the angles x and y.



21. In the given figure, EF || DQ and AB || CD. If $\angle FEB = 64°$, $\angle PDC = 27°$, then find $\angle PDQ$, $\angle AED$ and $\angle DEF$. *[Most Important]* [CBSE 2010]



22. In the given figure, AB || DE. Find the value of $\angle BCD$.



23. A transversal intersects two straight lines. If the bisectors of a pair of co-interior angles are perpendicular, prove that the two straight lines are parallel.

24. Two parallel lines are cut by a transversal, prove that

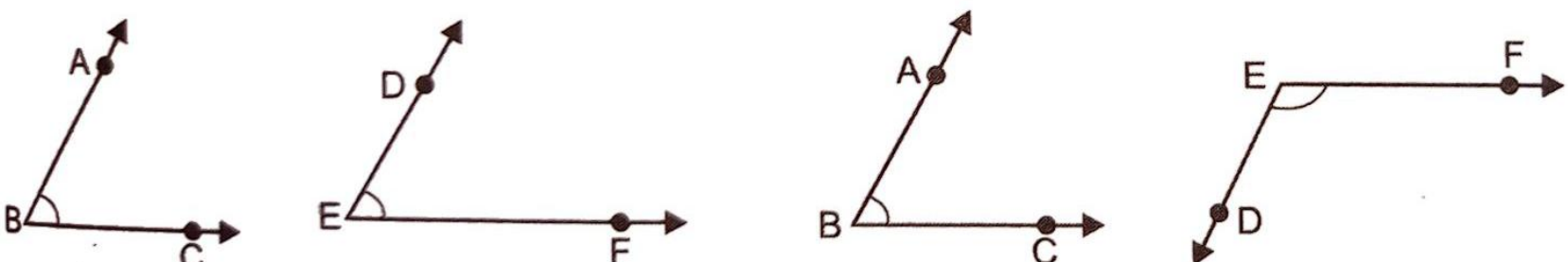
(*i*) bisectors of alternate angles are parallel to each other.

(*ii*) bisectors of corresponding angles are parallel to each other.

25. In the given figure, arms BA and BC of $\angle ABC$ are respectively parallel to arms ED and EF of $\angle DEF$.

For fig. (*a*), prove that $\angle ABC = \angle DEF$. For fig. (*b*), prove that $\angle ABC + \angle DEF = 180°$.

[**Hint:** See proof of case (I) and (III) of Example 22 on Page No. 308]



(*a*) (*b*)

Answers

1. 115° **2.** 120° **3.** 45°

4. (*i*) $\angle 2 = 72°, \angle 6 = 72°$ (*ii*) $\angle 1 = 30°, \angle 7 = 30°$

(*iii*) $\angle 4 = 72°, \angle 8 = 108°$

5. $\angle ABR = 40°$ **6.** 115° **8.** 125° **9.** $x = 39°$

10. $x = 30°$ **12.** $\angle ABC = 35°$

14. $x = 155°$ **15.** 108° **16.** 100° **17.** 3rt. $\angle s$

19. $x = 105°$ **20.** $x = 75°, y = 40°$

21. $\angle PDQ = 89°$, $\angle AED = 27°$ and $\angle DEF = 89°$ **22.** 40°