



## MATHS

### BOOKS - RS AGGARWAL MATHS (HINGLISH)

### LINES AND ANGLES

#### Solved Examples

1. Find the measure of an angle which is  $24^\circ$  more than its complement.



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2. Find the measure of an angle which is  $32^\circ$  less than its supplement.

A.  $47^\circ$

B.  $140^\circ$

C.  $90^\circ$

D.  $74^\circ$

**Answer: D**



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3. two supplementary angles are in the ratio 3:2,  
find the angles.

A.  $108^\circ$  ,  $72^\circ$

B.  $118^\circ$  ,  $72^\circ$

C.  $72^\circ$  ,  $208^\circ$

D. None of these

**Answer: A**



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4. The supplement of an angle is one third of the given angle. Find the measures of the given angle and its supplement.



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5. Find the measure of an angle if seven times its complement is  $10^\circ$  less than three times its supplement .

A.  $25^\circ$

B.  $50^\circ$

C.  $100^\circ$

D. None of these

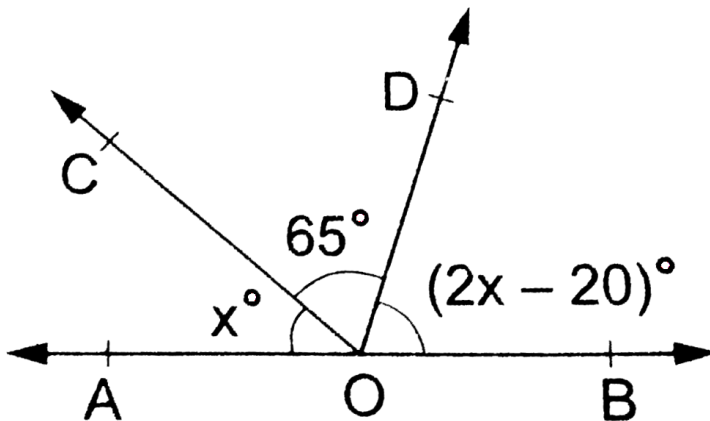
**Answer: A**



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6. In the adjoining figure,  $AOB$  is a straight line.

Find  $\angle AOC$  and  $\angle BOD$ .



A.  $40^\circ$  ,  $70^\circ$

B.  $45^\circ$  ,  $70^\circ$

C.  $45^\circ$  ,  $60^\circ$

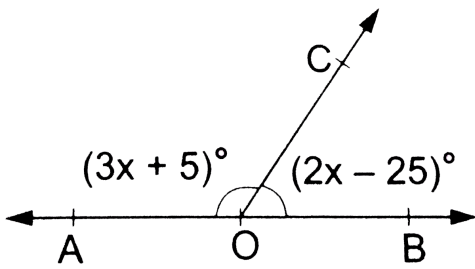
D.  $55^\circ$  ,  $70^\circ$

**Answer: B**



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7. In the adjoining figure, what value of  $x$  will make  $\text{AOB}$ , a straight line ?



A.  $x = 60$

B.  $x = 50$

C.  $x = 40$

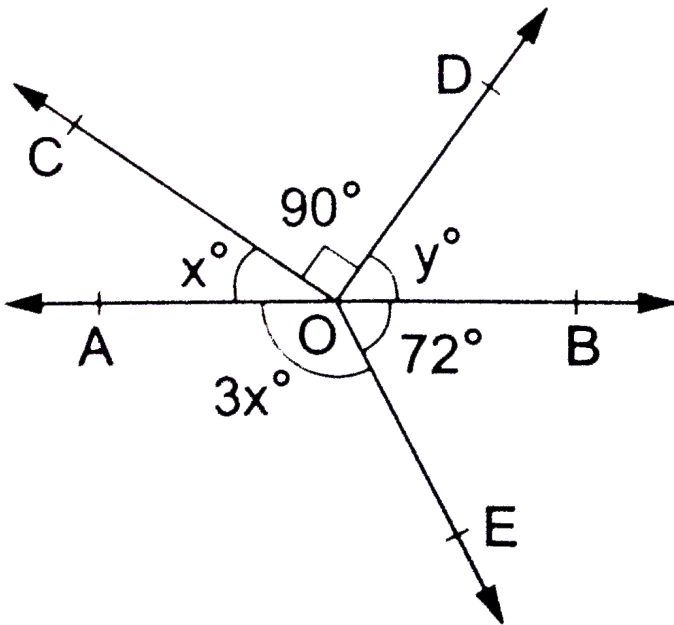
D.  $x = 30$

**Answer: C**



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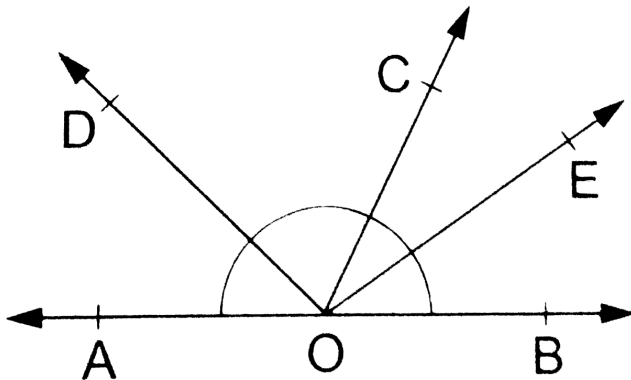
8. Calculate  $\angle AOC$ ,  $\angle BOD$  and  $\angle AOE$  in the adjoining figure, it is being given that  $\angle COD = 90^\circ$ ,  $\angle BOE = 72^\circ$  and  $AOB$  is a straight line.



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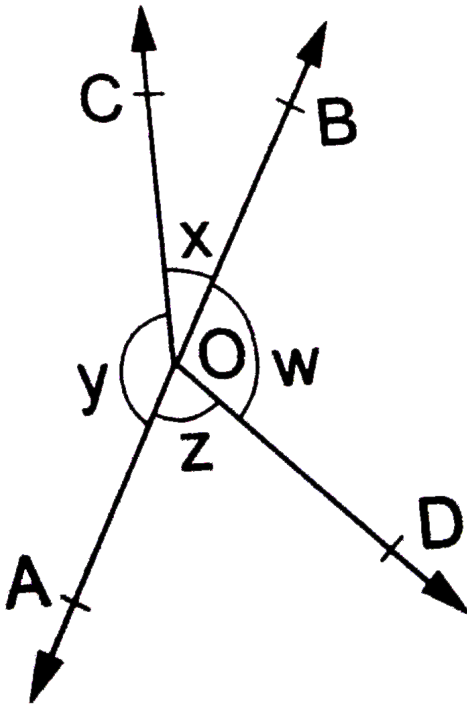


9. In the given figure, ray  $OC$  stands on a straight line  $AOB$ . Ray  $OD$  and ray  $OE$  are the bisectors of  $\angle AOC$  and  $\angle BOC$  respectively. Find the measure of  $\angle DOE$ .



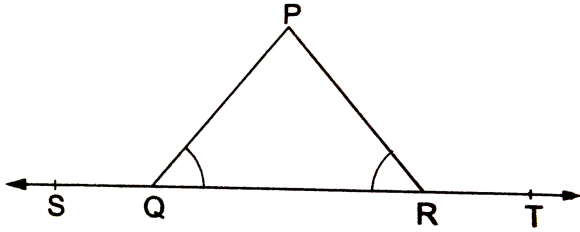
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10. In the given figure, if  $x + y = z + w$  then prove that AOB is a line.



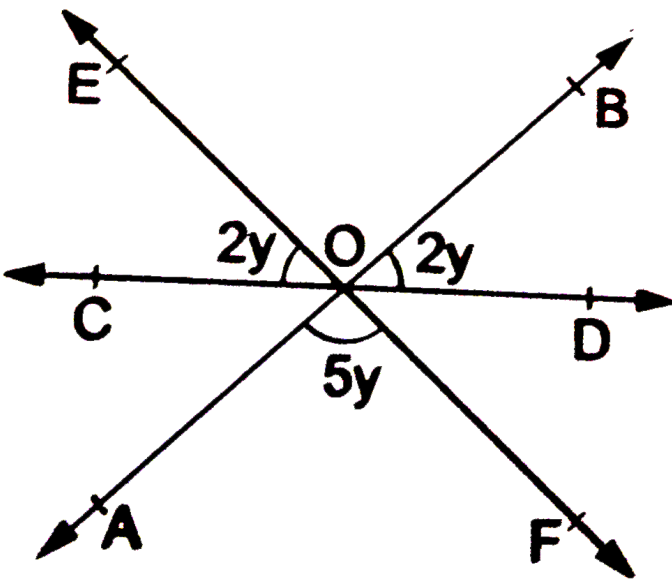
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11. In the given figure , if  $\angle PQR = \angle PRQ$  then prove that  $\angle PQS = \angle PRT$ .



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12. In the given figure, AB CD and EF are three lines concurrent at O. Find the value of y.



A.  $y = 10^\circ$ .

B.  $y = 30^\circ$ .

C.  $y = 20^\circ$ .

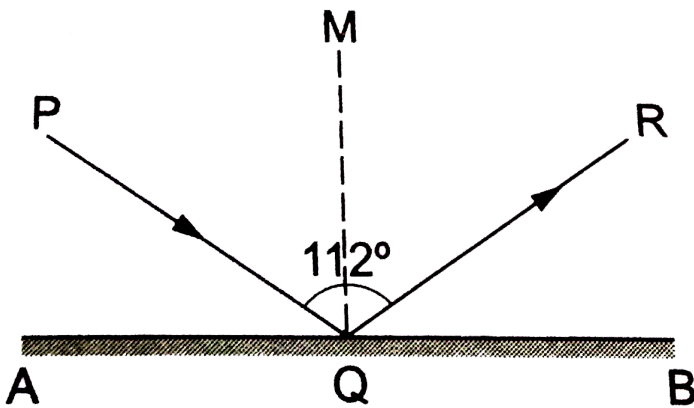
D.  $y = 40^\circ$ .

**Answer: C**



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13. In the given figure,  $AB$  is a mirror,  $PQ$  is the incident ray and  $QR$ , the reflected ray. If  $\angle PQR = 112^\circ$ , find  $\angle PQA$ .



A.  $35^\circ$

B.  $34^\circ$

C.  $36^\circ$

D.  $30^\circ$

**Answer: B**



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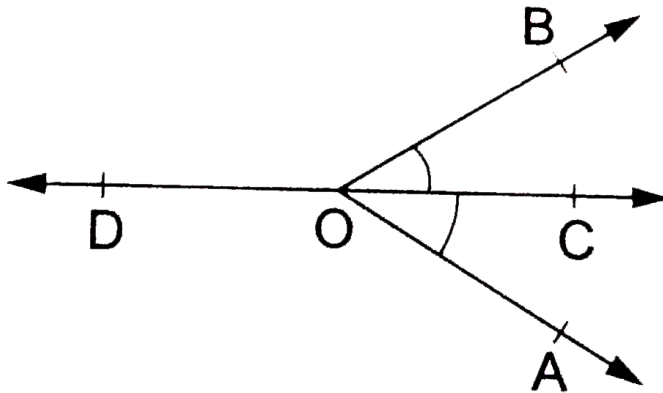
**14.** Prove that the bisectors of a pair of vertically opposite angles are in the same straight line.



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**15.** In the given figure, ray  $OC$  is the bisector of  $\angle AOB$  and  $OD$  is the ray opposite to  $OC$ . Show

that  $\angle AOD = \angle BOD$ .



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**16.** Prove that the two lines which are both parallel to the same line are parallel to one another.

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**17.** If a line is perpendicular to one of the two given parallel lines then prove that it is also perpendicular to the other line.



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**18.** If two parallel lines are intersected by a transversal then prove that the bisectors of any pair of alternate interior angles are parallel.



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**19.** If the bisectors of a pair of corresponding angles formed by a transversal with two given lines are parallel, prove that the given lines are parallel.



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**20.** If two parallel lines are intersected by a transversal, prove that the bisectors of the two pairs of interior angles enclose a rectangle.

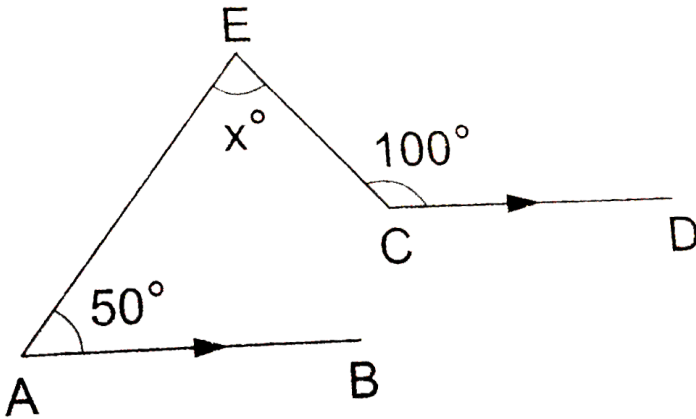


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21. In the given figure,

$AB \parallel CD$ ,  $\angle BAE = 50^\circ$ ,  $\angle AEC = x^\circ$  and

$\angle ECD = 100^\circ$ . Find the value of  $x$ .



A.  $x = 70$

B.  $x = 60$

C.  $x = 50$

D.  $x = 40$

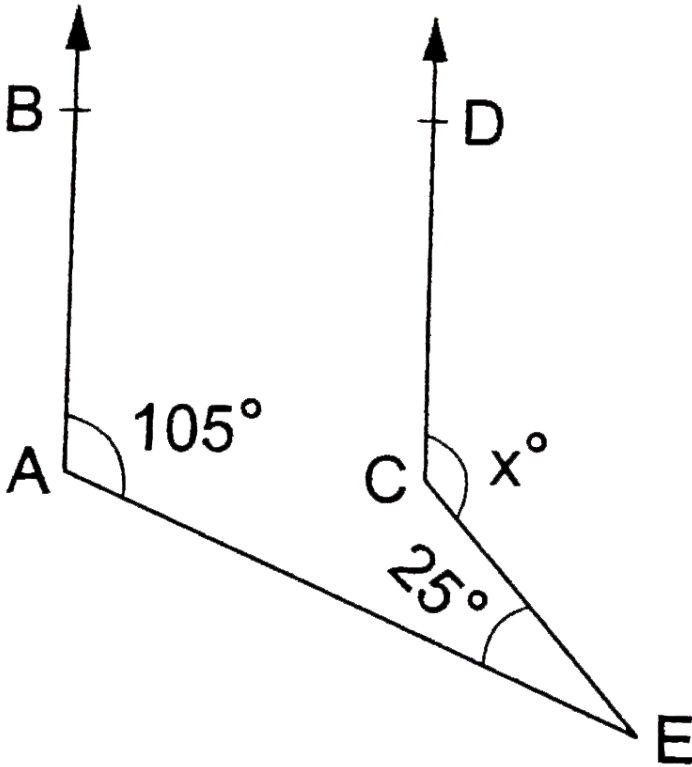
**Answer: C**



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22. In the given figure,  
 $AB \parallel CD$ ,  $\angle EAB = 105^\circ$ ,  $\angle AEC = 25^\circ$  and

$\angle ECD = x^\circ$ . Find the value of  $x$ .



- A.  $x = 120$
- B.  $x = 140$
- C.  $x = 130$
- D.  $x = 150$

**Answer: C**



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**23.** If the arms of one angle are respectively parallel to the arms of another angle, show that the two angles are either equal or supplementary.



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**24.** Prove the the opposite angles of a parallelogram are equal.



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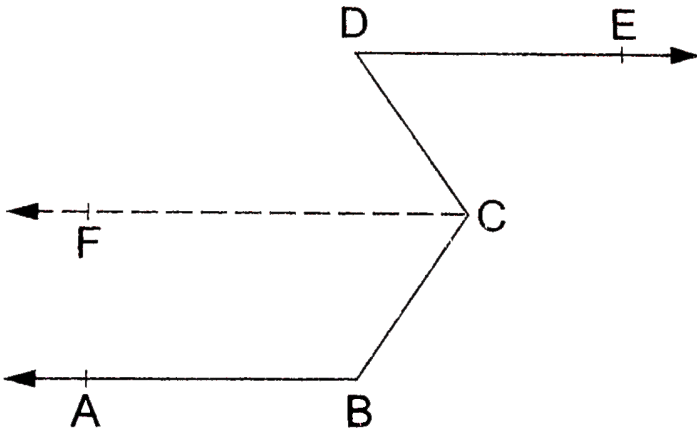
25. In the given figure,  $AB \parallel CD \parallel EF$ ,  $\angle DBG = x$ ,  
 $\angle EDH = y$ ,  $\angle AEB = z$ ,  $\angle EAB = 90^\circ$  and  
 $\angle BEF = 65^\circ$ . Find the values of  $x$ ,  $y$ , and  $z$ .



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26. In the given figure,  $AB \parallel DE$ . Prove that:

$$\angle ABC + \angle BCD = 180^\circ + \angle CDE.$$



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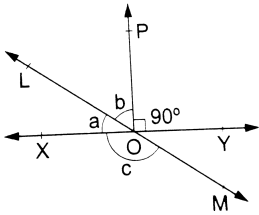
## Example

1. In the given figure, lines  $XY$  and  $LM$  intersect at  $O$ .

If

$$\angle XOL = a, \angle LOP = b, \angle POY = 90^\circ, \angle XOM = c$$

and  $a : b = 2 : 3$ , find the value of  $c$ .



A.  $144^\circ$

B.  $126^\circ$

C.  $90^\circ$

D.  $54^\circ$

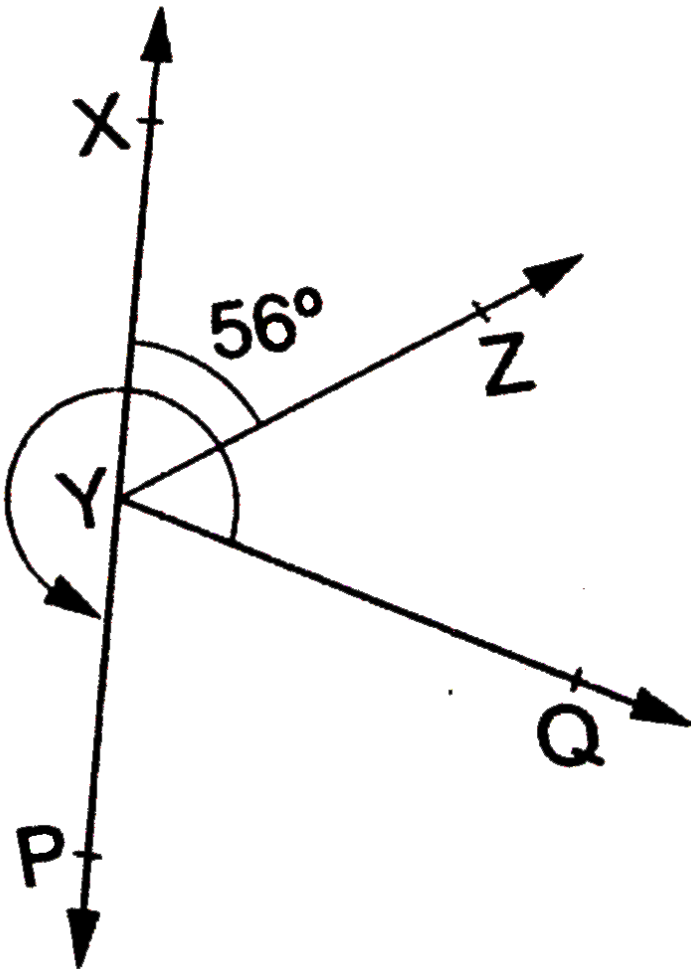
**Answer: A**



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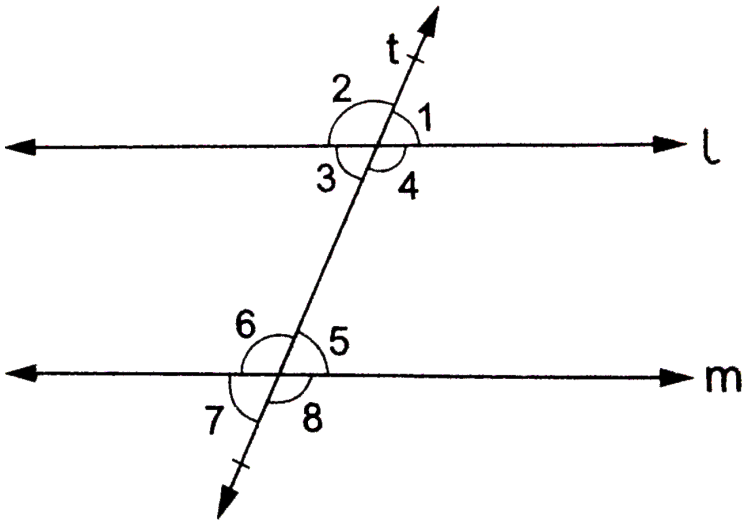
2. In the given figure,  $\angle XYZ = 56^\circ$  and  $XY$  is produced to a point  $P$ . If ray  $YQ$  bisects  $\angle ZYP$ , find  $\angle XYQ$  and reflex  $\angle QYP$ .





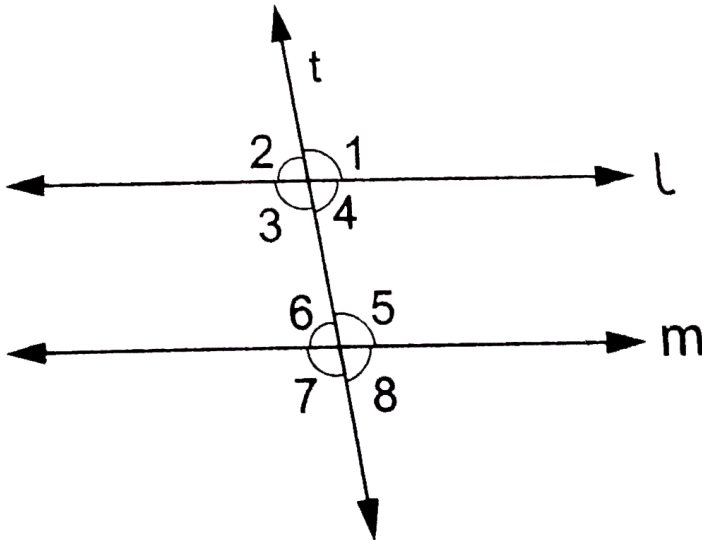
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3. In the given figure,  $l \parallel m$  and a transversal  $t$  cuts them. If  $\angle 1 = 70^\circ$ , find the measure of each of the remaining marked angles.



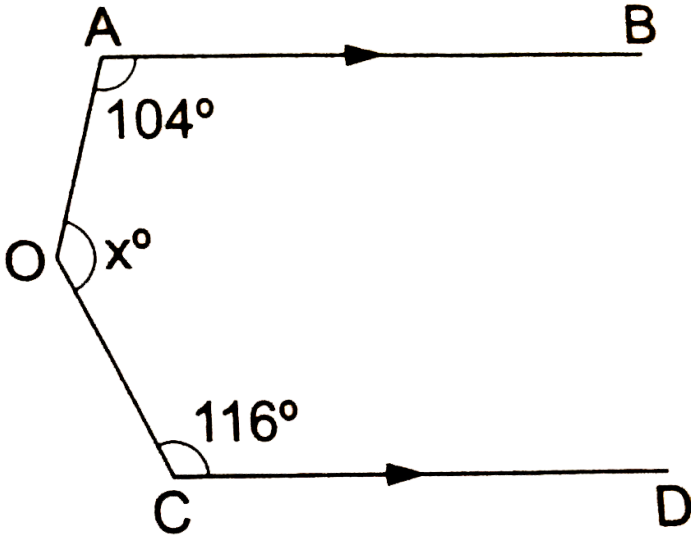
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4. In the given figure,  $l \parallel m$  and a transversal  $t$  cuts them. If  $\angle 1 : \angle 2 = 5 : 4$ , find the measure of each of the marked angles.



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5. In the given figure,  $AB \parallel CD$  and  $\angle AOC = x^\circ$ . If  $\angle OAB = 104^\circ$  and  $\angle OCD = 116^\circ$ , find the value of  $x$ .



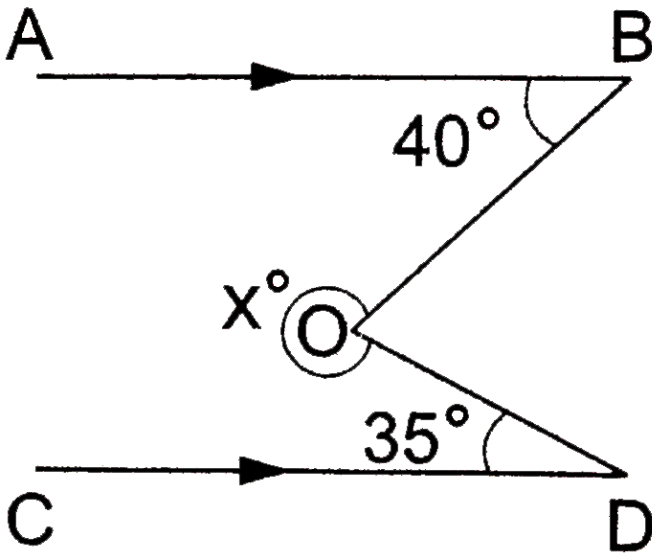
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6. In the given figure,

$AB \parallel CD$ ,  $\angle ABO = 40^\circ$ ,  $\angle CDO = 35^\circ$ . Find

the value of the reflex  $\angle BOD$  and hence the value

of  $x$ .



A. 283

B. 284

C. 285

D. 286

**Answer: C**

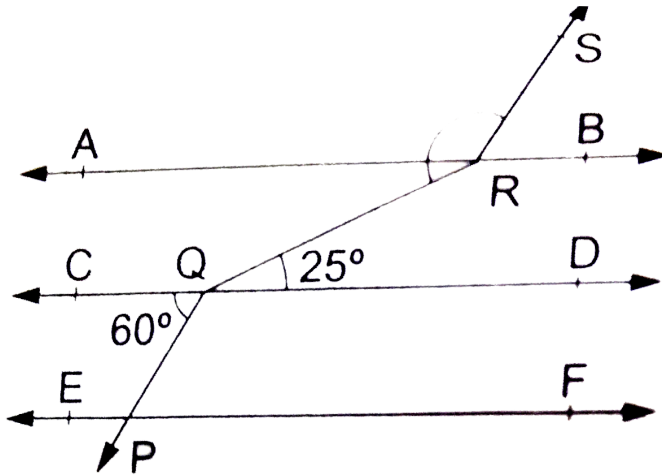


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7. In the given figure,

$AB \parallel CD \parallel EF$ ,  $PQ \parallel RS$ ,  $\angle RQD = 25^\circ$  and

$\angle CQP = 60^\circ$ . Find  $\angle QRS$ .

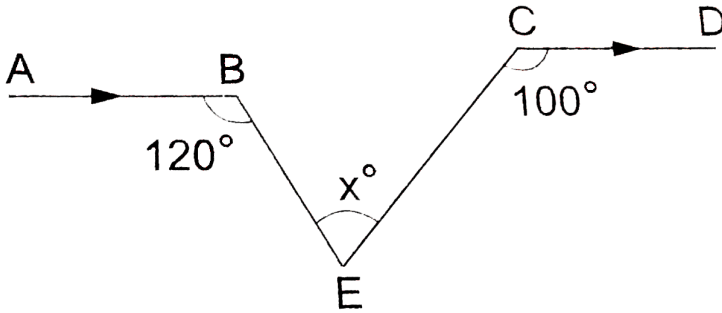


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8. In the given figure,

$AB \parallel CD$ ,  $\angle ABE = 120^\circ$ ,  $\angle ECD = 100^\circ$  and

$\angle BEC = x^\circ$ . Find the value of  $x$ .



A.  $x = 30$

B.  $x = 20$

C.  $x = 50$

D.  $x = 40$

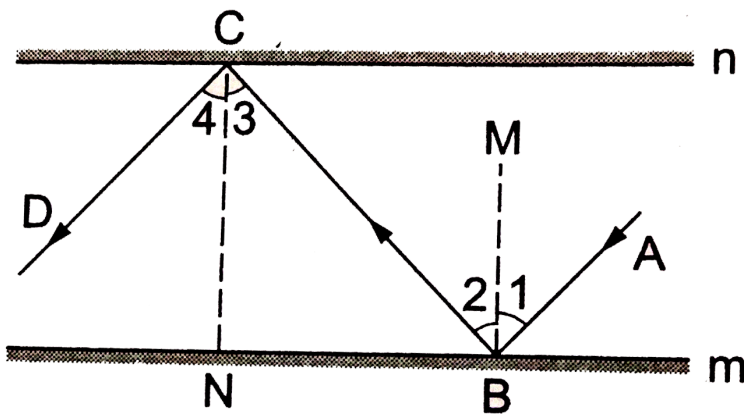
**Answer: D**



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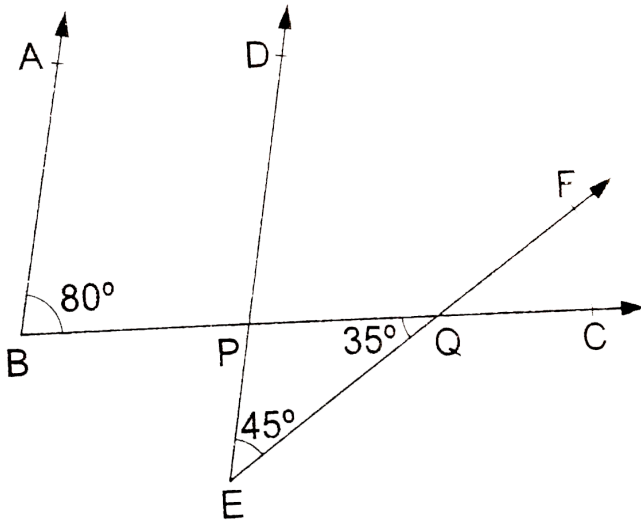


9. Two plane mirrors,  $m$  and  $n$ , are placed parallel to each other as shown in the figure, A ray  $AB$  is incident on the first mirror. It is reflected twice and emerges in the direction  $CD$ . Prove that  $AB \parallel CD$ .



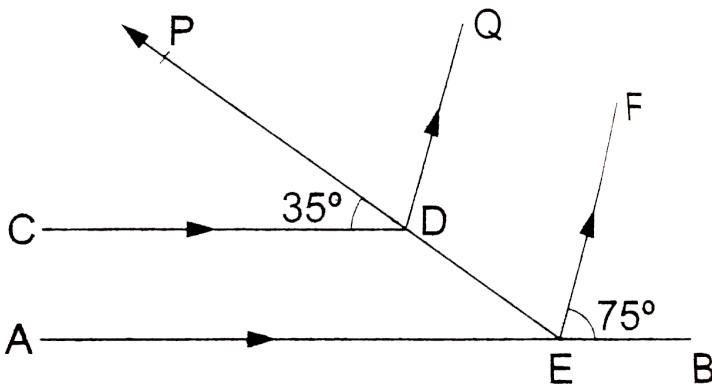
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10. In the given figure,  $\angle ABC = 80^\circ$  and  $\angle DEF = 45^\circ$ . The arms DE and EF of  $\angle DEF$  cut BC at P and Q respectively, Prove that  $PD \parallel BA$ .



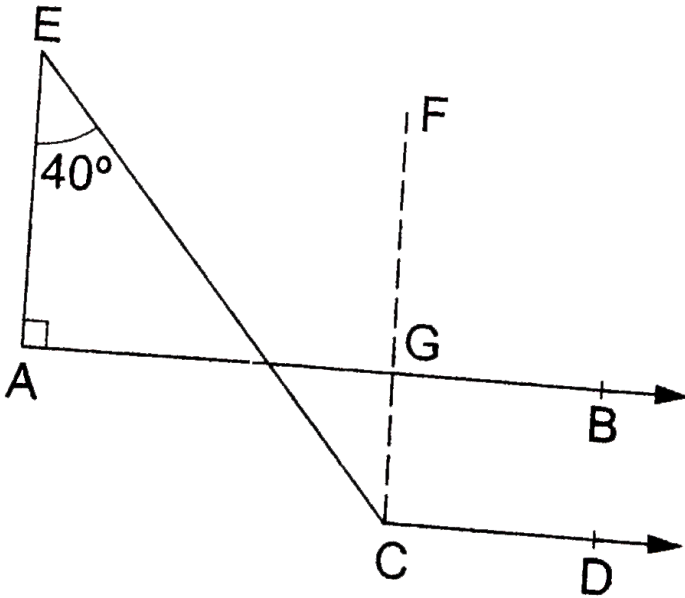
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11. In the given figure,  $AB \parallel CD$  and  $\angle CDP = 35^\circ$ .  $PD$  is produced downwards to meet  $AB$  at  $E$  and  $\angle BEF = 75^\circ$ . If  $DQ \parallel EF$ , find  $\angle AED$ ,  $\angle DEF$  and  $\angle PDQ$ .



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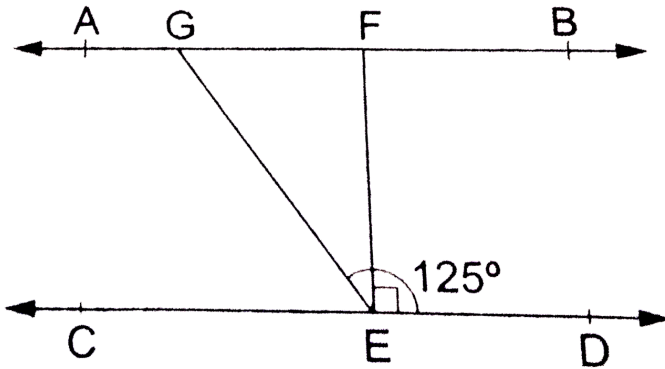
12. In the given figure,  $AB \parallel CD$ ,  $\angle A = 90^\circ$  and  $\angle AEC = 40^\circ$ . Find  $\angle ECD$ .



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13. In the given figure,

$AB \parallel CD$ ,  $\angle GED = 125^\circ$  and  $EF \perp CD$ . Find  $\angle AGE$ ,  $\angle GEF$  and  $\angle FGE$ .



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Exercise 7 A

1. Define the following terms :

(i) Angle

(ii) Interior of an angle

(iii) Obtuse angle

(iv) Reflex angle

(v) Complementary angles

(vi) Supplementary angles



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2. Find the complement of each of the following angles:

(i)  $55^\circ$  (ii)  $16^\circ$

(iii)  $90^\circ$  (iv)  $\frac{2}{3}$  of a right angle



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3. Find the supplement of each of the following angles :

(i)  $42^\circ$  (ii)  $90^\circ$

(iii)  $124^\circ$  (iv)  $\frac{3}{5}$  of a right angle



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4. Find the measure of an angle which is

(i) equal to its complement, (ii) equal to its supplement.



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5. Find the measure of an angle which is  $36^\circ$  more than its complement.

A.  $62^\circ$

B.  $63^\circ$

C.  $64^\circ$



D.  $65^\circ$

**Answer: B**



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6. Find the measure of an angle which is  $30^\circ$  less than its supplement.



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7. Find the angle which is four times its complement.



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8. Find the angle which is five times its supplement.



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9. Find the angle whose supplement is four times its complement.

A.  $30^\circ$

B.  $45^\circ$

C.  $60^\circ$

D.  $90^\circ$

**Answer: C**



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**10.** Find the angle whose complement is one third of its supplement.



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**11.** Two complementary angles are in the ratio 4 : 5.  
Find the angles.

A.  $40^\circ$ ,  $30^\circ$

B.  $40^\circ$ ,  $50^\circ$

C.  $60^\circ$ ,  $50^\circ$

D.  $50^\circ$ ,  $50^\circ$

**Answer: B**



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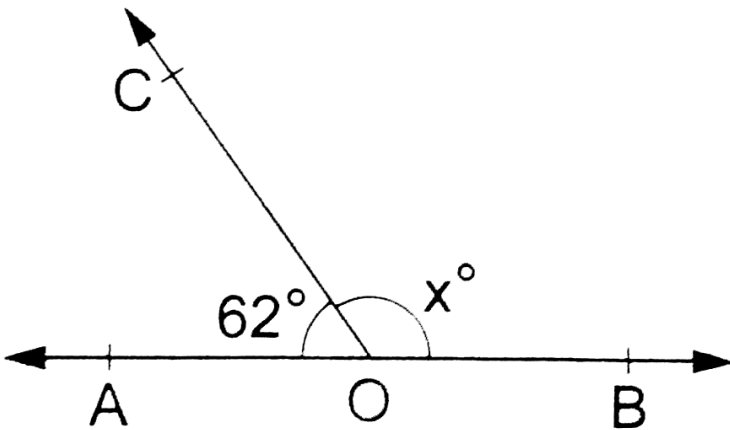
**12.** Find the values of  $x$  for which the angles  $(2x - 5)^\circ$  and  $(x - 10)^\circ$  are the complementary angles.



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## Exercise 7 B

1. In the adjoining figure, AOB is a straight line. Find the value of  $x$ .



A. 116

B. 118

C. 117

D. 119

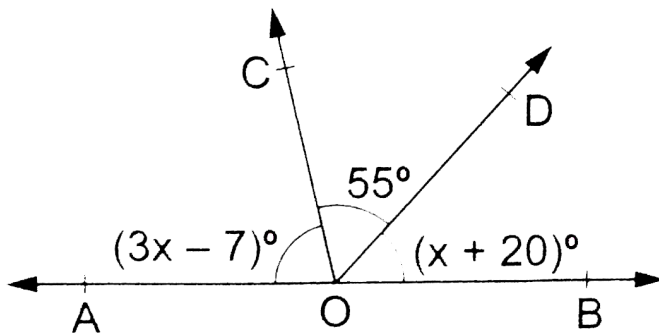
**Answer: B**



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2. In the adjoining figure,  $AOB$  is a straight line.

Find the value of  $x$ . Hence, find  $\angle AOC$  and  $\angle BOD$ .



A.  $64^\circ$

B.  $84^\circ$

C.  $38^\circ$

D.  $48^\circ$

**Answer:**  $x = 28$ ,  $\angle AOC = 77^\circ$ ,  $\angle BOD = 48^\circ$

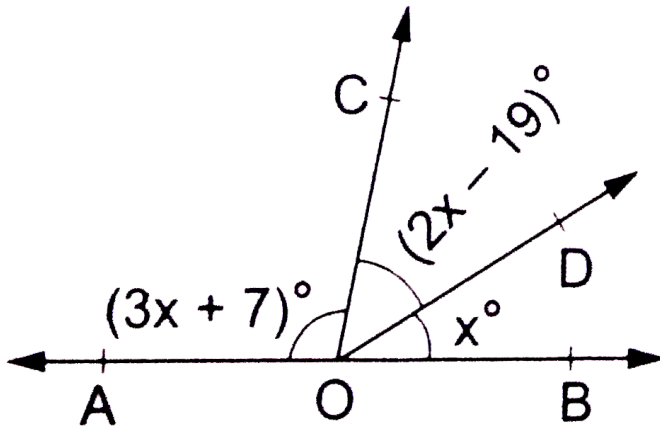


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3. In the adjoining figure,  $AOB$  is a straight line .

Find the value of  $x$ . Hence, find  $\angle AOC$ ,  $\angle COD$  and

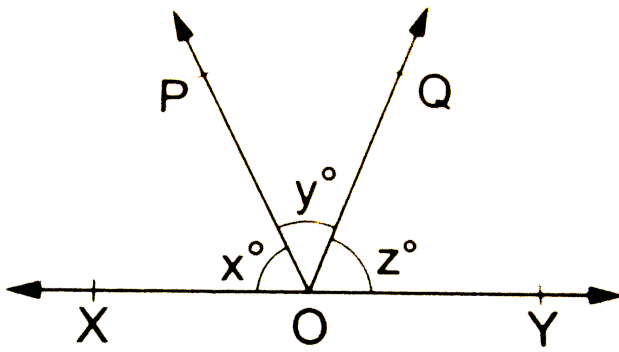
$\angle BOD$ .



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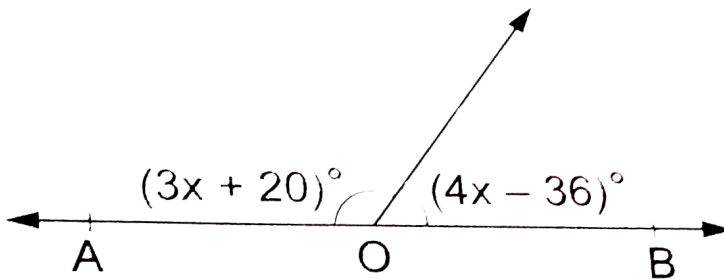
4. In the adjoining figure,  $x : y : z = 5 : 4 : 6$ . If XOY is a straight line, find the values of  $x$ ,  $y$  and  $z$ .





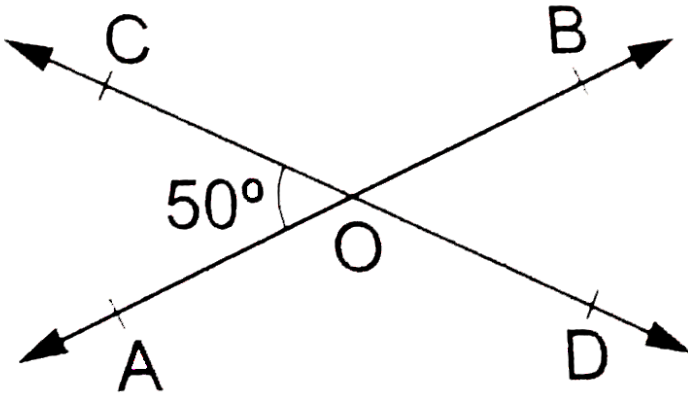
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5. In the adjoining figure, what value of  $x$  will make AOB, a straight line ?



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6. Two lines  $AB$  and  $CD$  intersect at  $O$ . If  $\angle AOC = 50^\circ$ , find  $\angle AOD$ ,  $\angle BOD$  and  $\angle BOC$ .



A.

$$\angle AOD = 130^\circ, \angle BOC = 130^\circ, \angle BOD = 70^\circ$$

B.

$$\angle AOD = 130^\circ, \angle BOC = 140^\circ, \angle BOD = 50^\circ$$

C.

$$\angle AOD = 130^\circ, \angle BOC = 130^\circ, \angle BOD = 50^\circ$$

D.

$$\angle AOD = 150^\circ, \angle BOC = 130^\circ, \angle BOD = 50^\circ$$

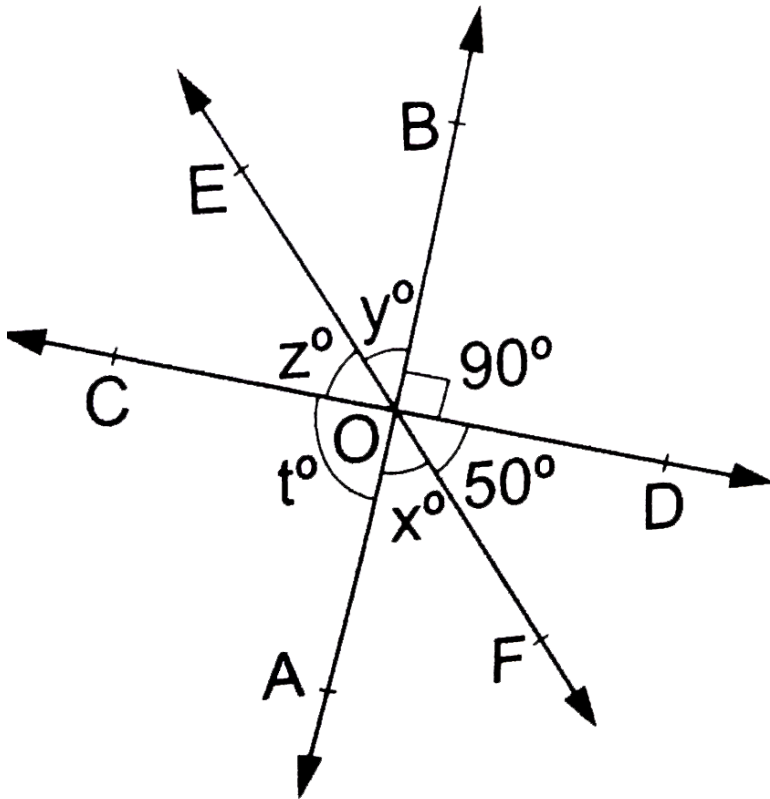
**Answer: C**



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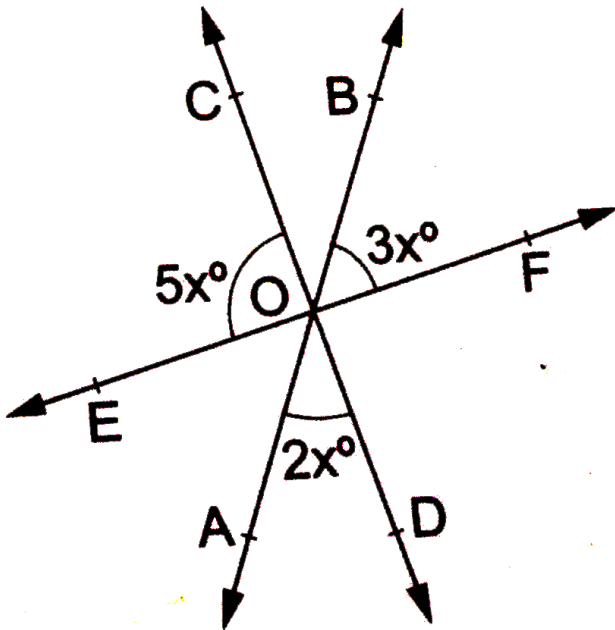
7. In the adjoining figure, three coplanar lines AB, CD and EF intersect at a point O, forming angles as

shown. Find the values of  $x$ ,  $y$ ,  $z$  and  $t$ .



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8. In the adjoining figure, three coplanar lines AB, CD and EF intersect at a point O. Find the value of  $x$ . Hence, find  $\angle AOD$ ,  $\angle COE$  and  $\angle AOE$ .



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9. Two adjacent angles on a straight line are in the ratio 5 : 4. find the measure of each one of these angles.

A.  $100^\circ$ ,  $90^\circ$

B.  $90^\circ$ ,  $90^\circ$

C.  $100^\circ$ ,  $80^\circ$

D.  $70^\circ$ ,  $80^\circ$

**Answer: C**



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**10.** If two straight lines intersect each other in such a way that one of the angles formed measures  $90^\circ$ , show that each of the remaining angles measures  $90^\circ$ .



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**11.** Two lines AB and CD intersect at a point O such that  $\angle BOC + \angle AOD = 280^\circ$ , as shown in the figure. Find all the four angles.



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12. Two lines  $AB$  and  $CD$  intersect each other at a point  $O$  such that  $\angle AOC : \angle AOD = 5 : 7$ . Find all the angles.



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13. In the given figure, three lines  $AB$ ,  $CD$  and  $EF$  intersect at a point  $O$  such that  $\angle AOE = 35^\circ$  and  $\angle BOD = 40^\circ$ . Find the measure of  $\angle AOC$ ,  $\angle BOF$ ,  $\angle COF$  and  $\angle DOE$ .



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**14.** In the given figure, the two lines AB and CD intersect at a point O such that  $\angle BOC = 125^\circ$ . Find the values of x, y, and z.



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**15.** If two straight lines intersect each other, prove that the ray opposite to the bisector of one of the angles thus formed bisects the vertically opposite angle.



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16. Prove that the bisectors of two adjacent supplementary angles include a right angle.



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## Exercise 7 C

1. In this given figure,  $l \parallel m$  and a transversal  $t$  cuts them. If  $\angle 7 = 120^\circ$ , find the measure of each of the remaining marked angles.



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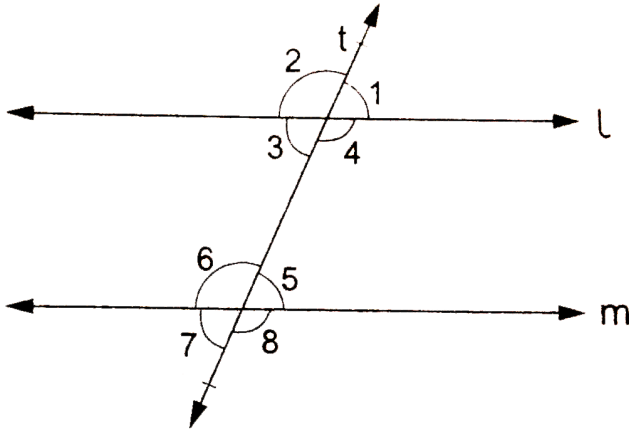
2. In the given figure,  $l \parallel m$  and a transversal  $t$  cuts them. If  $\angle 7 = 80^\circ$ , find the measure of each of the remaining marked angles.



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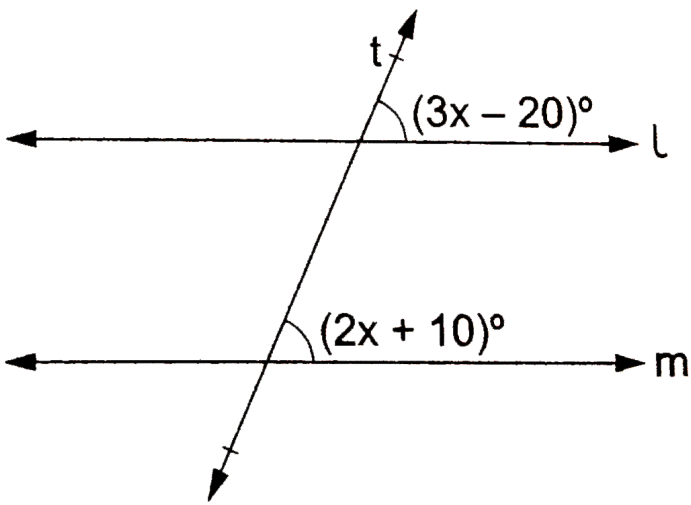
3. In the given figure,  $l \parallel m$  and a transversal  $t$  cuts them. If  $\angle 1 : \angle 2 = 2 : 3$ , find the measure of each of

the marked angles.



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4. For what value of  $x$  will the lines  $l$  and  $m$  be parallel to each other ?



A.  $x = 45^\circ$

B.  $x = 40^\circ$

C.  $x = 30^\circ$

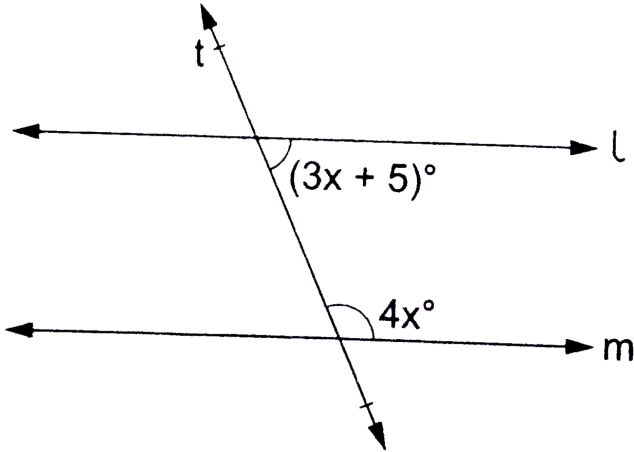
D.  $x = 60^\circ$

**Answer: C**



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5. For what value of  $x$  will the lines  $l$  and  $m$  be parallel to each other ?



A.  $x = 50$

B.  $x = 25$

C.  $x = 20$

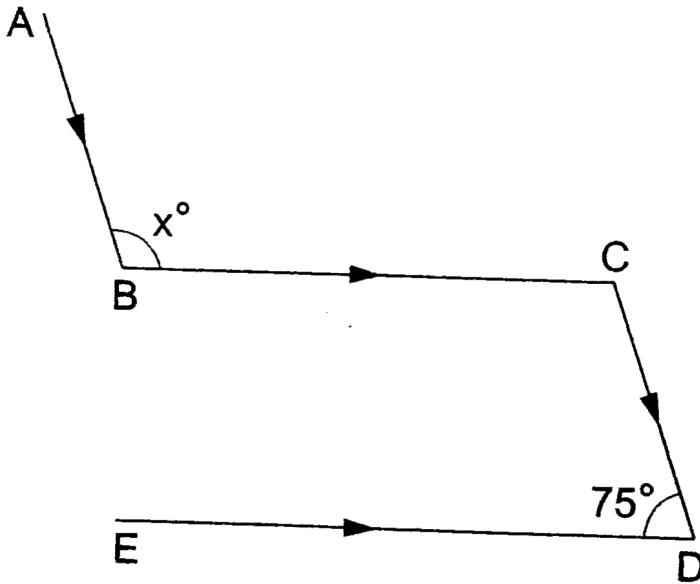
D.  $x = 35$

Answer: B

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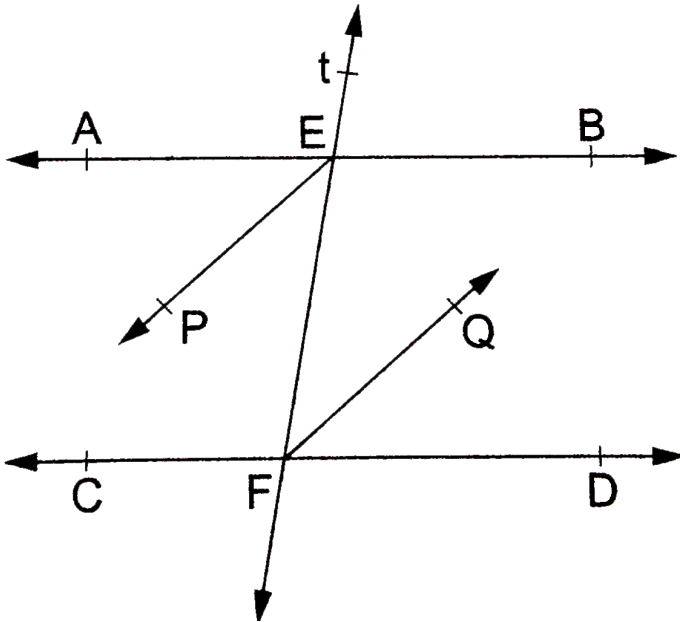
6. In the given figure,  $AB \parallel CD$  and  $BC \parallel ED$ .

Find the value of  $x$ .



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7. In the given figure,  $AB \parallel CD \parallel EF$ . Find the value of  $x$ .



A. 40

B. 10

C. 20



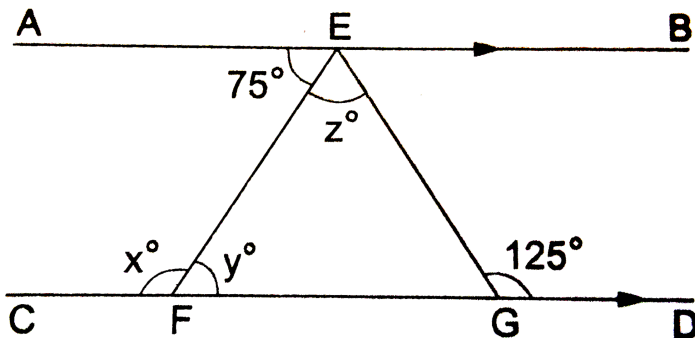
D. 30

**Answer:**  $x = 20$



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8. In the given figure,  $AB \parallel CD$ . Find the values of  $x$ ,  $y$  and  $z$ .



A.  $x = 110$ ,  $y = 55$ ,  $z = 65$

B.  $x = 115, y = 65, z = 60$

C.  $x = 100, y = 70, z = 55$

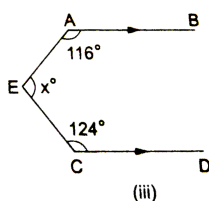
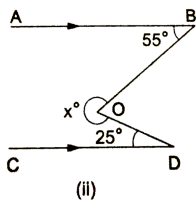
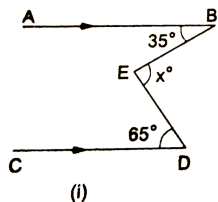
D.  $x = 105, y = 75, z = 50$

**Answer: D**

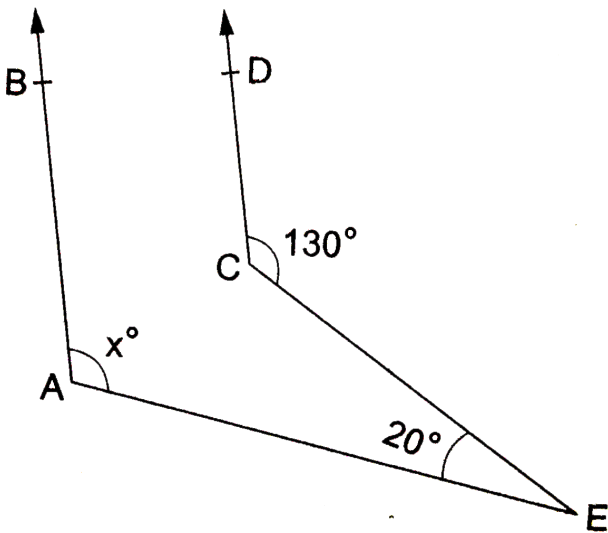
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9. In each of the figures given below,  $AB \parallel CD$ .

Find the value of  $x$  in each case.



10. In the given figure,  $AB \parallel CD$ . Find the value of  $x$ .



A.  $x = 120^\circ$

B.  $x = 130^\circ$

C.  $x = 115^\circ$

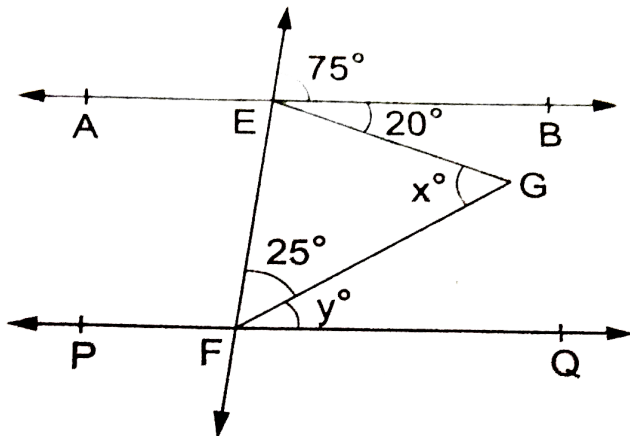
D.  $x = 110^\circ$

Answer: *D*



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11. In the given figure,  $AB \parallel PQ$ . Find the values of  $x$  and  $y$ .



A.  $x = 70, y = 50$

B.  $x = 75, y = 55$

C.  $x = 50, y = 70$

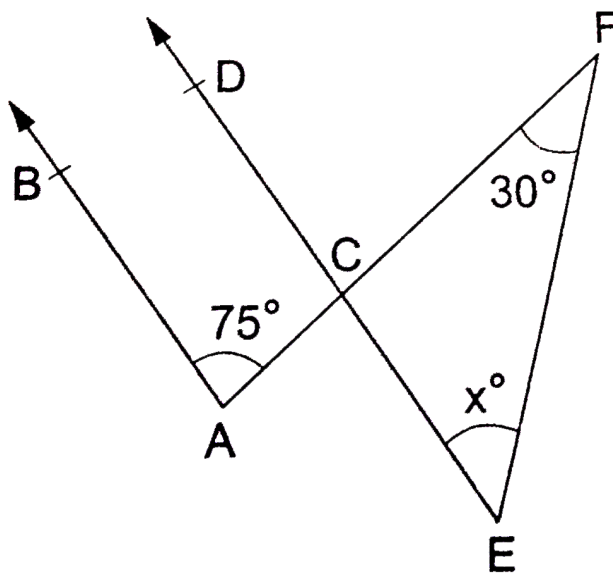
D.  $x = 70, y = 60$

**Answer: A**



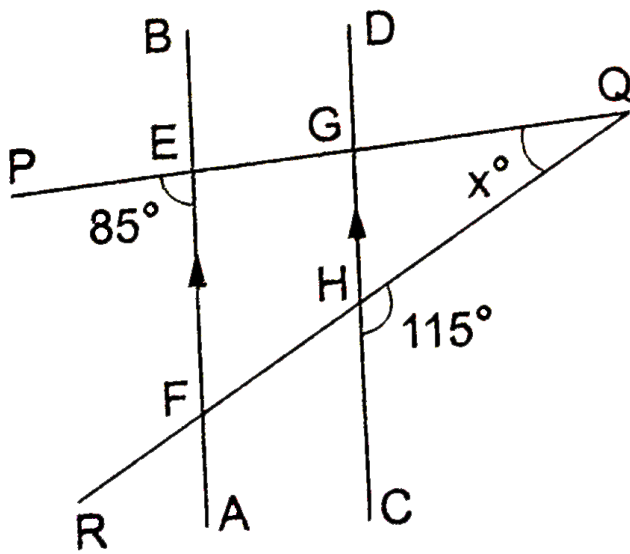
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**12.** In the given figure,  $AB \parallel CD$ . Find the value of  $x$ .



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13. In the given figure,  $AB \parallel CD$ . Find the value of  $x$ .



A.  $x = 40$

B.  $x = 30$

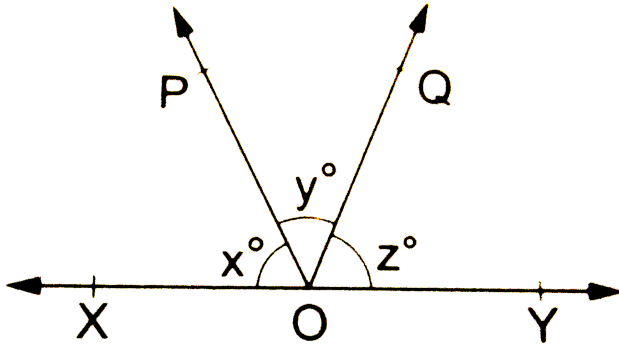
C.  $x = 20$

D.  $x = 10$

Answer: C

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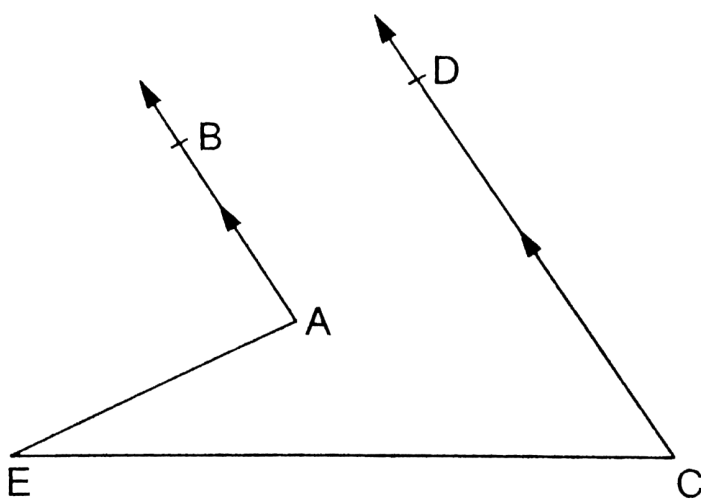
14. In the given figure,  $AB \parallel CD$ . Find the value of  $x, y$  and  $z$ .



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15. In the given figure,  $AB \parallel CD$ . Prove that  $\angle BAE - \angle ECD = \angle AEC$

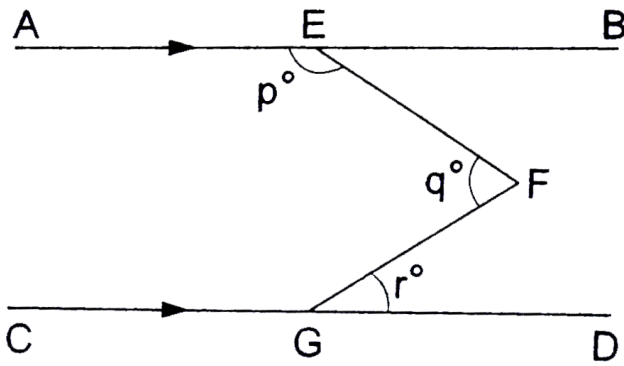




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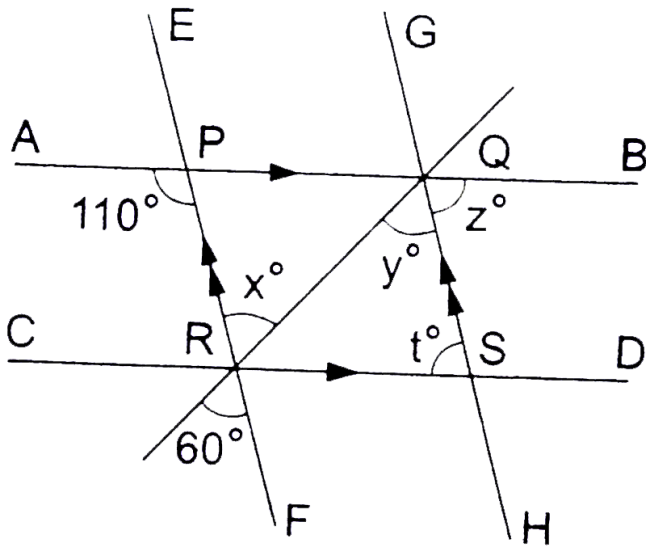
**16.** In the given figure,  $AB \parallel CD$ . Prove that

$$p + q - r = 180.$$



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17. In the given figure,  $AB \parallel CD$  and  $EF \parallel GH$ . Find the values of  $x, y, z$  and  $t$ .



A.  $x = 60, y = 70, z = 60, t = 70$

B.  $x = 70, y = 70, z = 60, t = 60$

C.  $x = 40, y = 50, z = 60, t = 70$

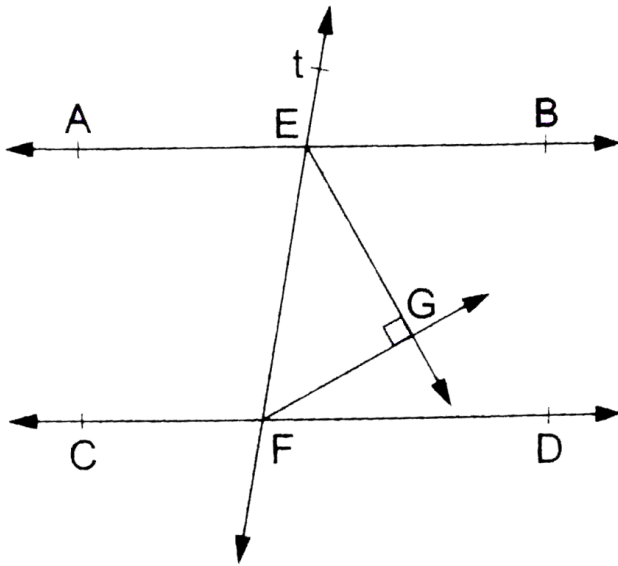
D.  $x = 60, y = 60, z = 70, t = 70$

**Answer: D**



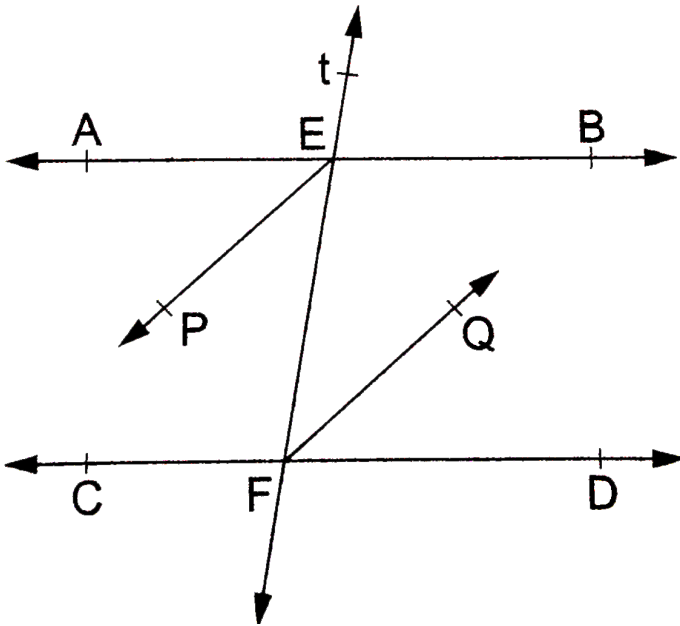
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18. In the given figure,  $AB \parallel CD$  and a transversal  $t$  cuts them at  $E$  and  $F$  respectively. If  $EG$  and  $FG$  are the bisectors of  $\angle BEF$  and  $\angle EFD$  respectively, prove that  $\angle EGF = 90^\circ$ .



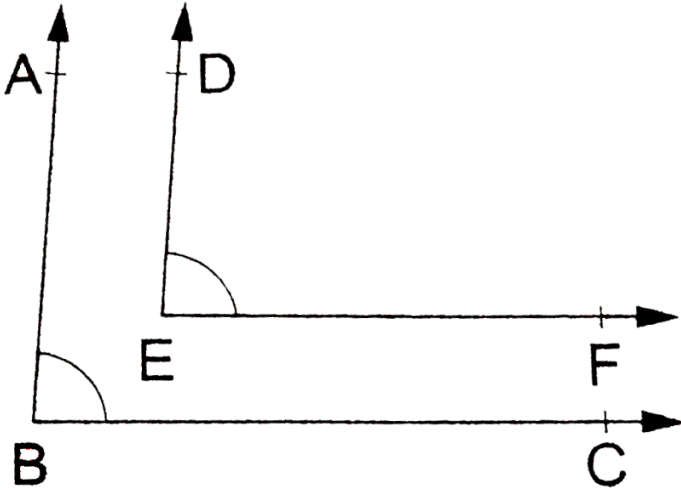
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19. In the given figure,  $AB \parallel CD$  and a transversal  $t$  cuts them at  $E$  and  $F$  respectively. If  $EP$  and  $FQ$  are the bisectors of  $\angle AEF$  and  $\angle EFD$  respectively, prove that  $EP \parallel FQ$ .



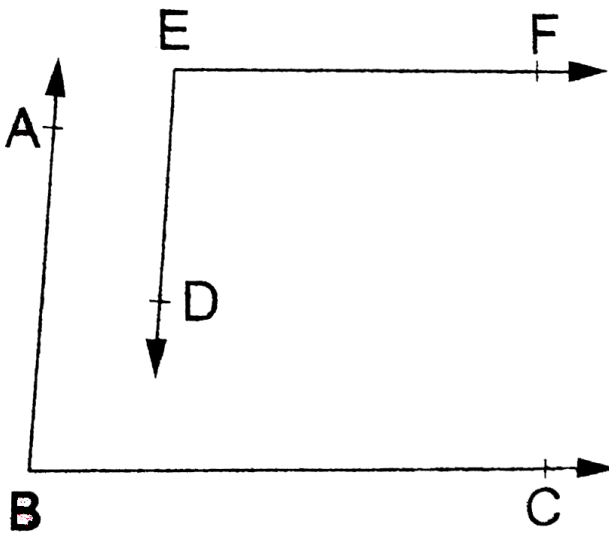
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20. In the given figure,  $BA \parallel ED$  and  $BC \parallel EF$ . Show that  $\angle ABC = \angle DEF$ .



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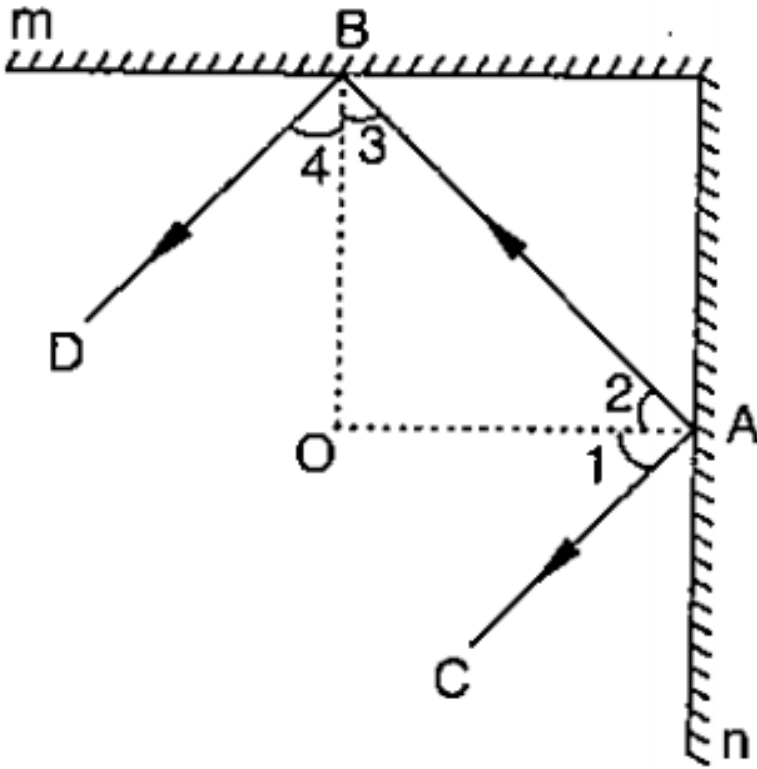
21. In the given figure,  $BA \parallel ED$  and  $BC \parallel EF$ . Show that  $\angle ABC + \angle DEF = 180^\circ$ .



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22. In Figure,  $m$  and  $n$  are two plane mirrors perpendicular to each other. Show that the

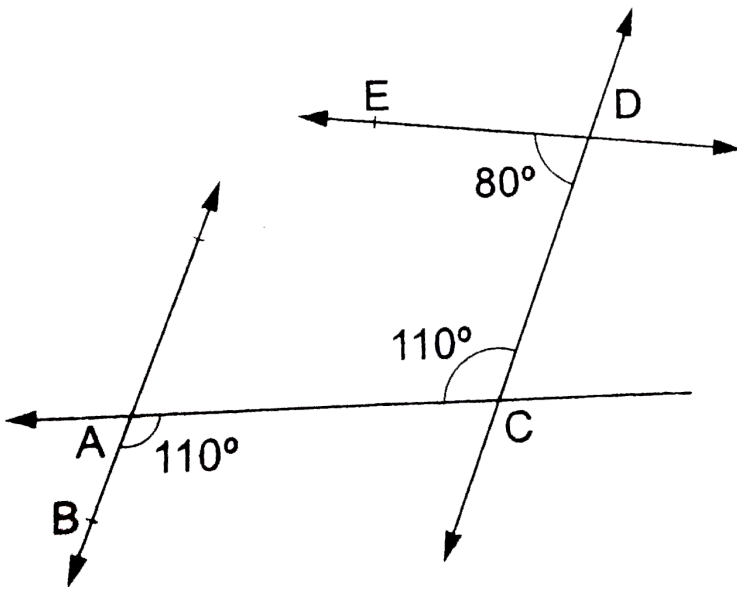
incident ray  $CA$  is parallel to the reflected ray  $BD$



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**23.** In the figure given below, state which lines are parallel and why ?





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



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## Multiple Choice Questions Mcq

1. 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: B**



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2. An exterior angle of a triangle is  $110^\circ$  and its two interior opposite angles are equal. Each of these equal angles is

A.  $70^\circ$

B.  $55^\circ$

C.  $35^\circ$

D.  $27\frac{1}{2}^\circ$

**Answer: B**



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3. The angles of a triangle are in the ratio 3:5:7.

The triangle is

- A. acute angled
- B. obtuse angled
- C. right angled
- D. an isosceles triangle

**Answer: B**



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4. If one of the angles of a triangle is  $130^\circ$  then the angle between the bisectors of the other two angles can be

A.  $50^\circ$

B.  $65^\circ$

C.  $90^\circ$

D.  $155^\circ$

**Answer: D**



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5. In the given figure, AOB is a straight line. The value of  $x$  is



A. 12

B. 15

C. 20

D. 25

**Answer: B**



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6. The angles of a triangle are in the ratio 2:3:4.

The largest angle of the triangle is

A.  $120^\circ$

B.  $100^\circ$

C.  $80^\circ$

D.  $60^\circ$

**Answer: C**



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7. In the given figure,  $\angle OAB = 110^\circ$  and  $\angle BCD = 130^\circ$  then  $\angle ABC$  is equal to



A.  $40^\circ$

B.  $50^\circ$

C.  $60^\circ$

D.  $70^\circ$

**Answer: C**



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8. If two angles are complementary to each other, then each angle is :

- A. an acute angle
- B. an obtuse angle
- C. a right angle
- D. a reflex angle

**Answer: D**



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9. An angle which measures more than  $180^\circ$  but less than  $360^\circ$ , is called

- A. an acute angle
- B. an obtuse angle
- C. a straight angle
- D. a reflex angle

**Answer: D**



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10. The measure of an angle which is five times its complement. The angle measures.

A.  $25^\circ$

B.  $35^\circ$

C.  $65^\circ$

D.  $75^\circ$

**Answer: D**



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11. Two complementary angles are such that twice the measure of the one is equal to three times the measure of the other. The largest of the two measures.

A.  $72^\circ$

B.  $54^\circ$

C.  $63^\circ$

D.  $36^\circ$

**Answer: B**



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12. In the given figure, AOB is a straight line. If

$$\angle AOC = 4x^\circ \quad \text{and} \quad \angle BOC = 5x^\circ \quad \text{then}$$

$$\angle AOC = ?$$



A.  $40^\circ$

B.  $60^\circ$

C.  $80^\circ$

D.  $100^\circ$

**Answer: C**

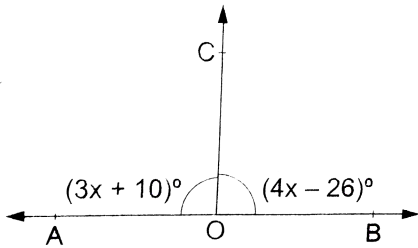


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13. In the given figure, AOB is a straight line. If

$$\angle AOC = (3x + 10)^\circ \text{ and } \angle BOC = (4x - 26)^\circ,$$

then  $\angle BOC = ?$



A.  $96^\circ$

B.  $86^\circ$

C.  $76^\circ$

D.  $106^\circ$

**Answer: B**



14. In the given figure, AOB is a straight line. If

$$\angle AOC = (3x - 10)^\circ, \angle COD = 50^\circ \quad \text{and}$$

$$\angle BOD = (x + 20)^\circ \text{ then } \angle AOC = ?$$



A.  $40^\circ$

B.  $60^\circ$

C.  $80^\circ$

D.  $50^\circ$

**Answer: C**



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15. Which of the following statements is false ?

- A. Through a given point, only one straight line can be drawn.
- B. Through two given points, it is possible to draw one and only one straight line.
- C. Two straight lines can intersect only at one point.



D. A line segment can be produced to any desired length.

**Answer: A**



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**16.** An angle is one fifth of its supplement. The measure of the angle is

A.  $15^\circ$

B.  $30^\circ$

C.  $75^\circ$

D.  $150^\circ$

**Answer: B**



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**17.** In the adjoining figure, AOB is a straight line. If

$x : y : z = 4 : 5 : 6$ , then  $y = ?$



A.  $60^\circ$

B.  $80^\circ$

C.  $48^\circ$

D.  $72^\circ$

**Answer: A**



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**18.** In the given figure, straight lines AB and CD intersect at O. If  $\angle AOC = \phi$ ,  $\angle BOC = \theta$  and  $\theta = 3\phi$ , then  $\phi = ?$

A.  $30^\circ$

B.  $40^\circ$

C.  $45^\circ$

D.  $60^\circ$

**Answer: C**



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**19.** straight lines  $AB$  and  $CD$  intersect at  $O$ . If

$\angle AOC + \angle BOD = 130^\circ$  then  $\angle AOD = ?$

A.  $65^\circ$

B.  $115^\circ$

C.  $110^\circ$

D.  $125^\circ$

**Answer: B**



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20. In the given figure, AB is a mirror, PQ is the incident ray and QR is the reflected ray. If  $\angle PQR = 108^\circ$  then  $\angle AQP = ?$

A.  $72^\circ$

B.  $18^\circ$

C.  $34^\circ$

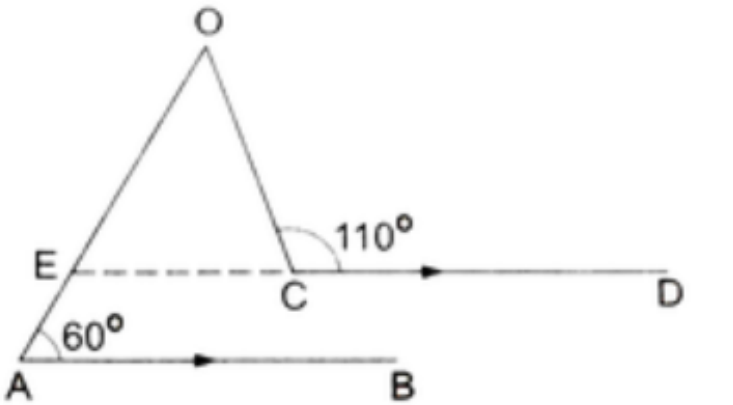
D.  $54^\circ$

Answer: `C



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21. In the given figure,  $AB \parallel CD$ . If  $\angle BAO = 60^\circ$  and  $\angle OCD = 110^\circ$  then  $\angle AOC = ?$



A.  $70^\circ$

B.  $60^\circ$

C.  $50^\circ$

D.  $40^\circ$

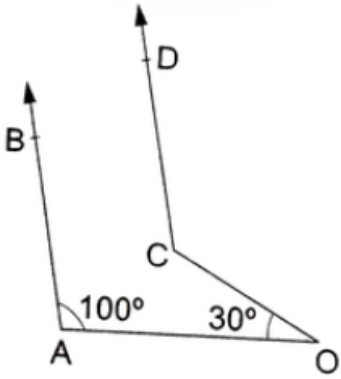
**Answer: C**



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22. In the given figure,  $AB \parallel CD$ . If  $\angle AOC = 30^\circ$  and  $\angle OAB = 100^\circ$  then

$$\angle OCD = ?$$



A.  $130^\circ$

B.  $150^\circ$

C.  $80^\circ$

D.  $100^\circ$

**Answer: A**



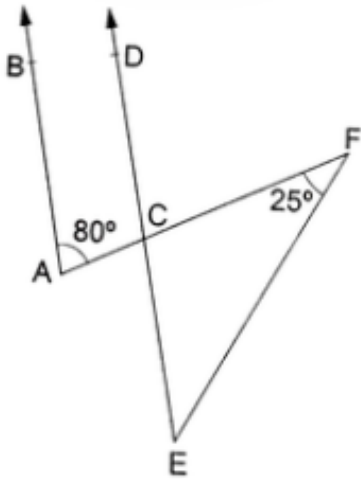
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23. In the given figure,  $AB \parallel CD$ . If

$\angle CAB = 80^\circ$  and  $\angle EFC = 25^\circ$  then

$\angle CEF = ?$



A.  $65^\circ$

B.  $55^\circ$

C.  $45^\circ$

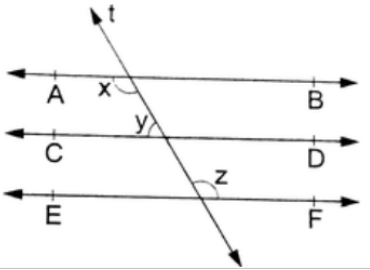
D.  $75^\circ$

Answer: B



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24. In the given figure  $AB \parallel CD$  and  $CD \parallel EF$ . If  $y:z = 3:7$  then  $x = ?$



A.  $108^\circ$

B.  $126^\circ$

C.  $162^\circ$

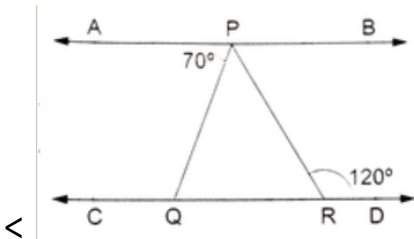
D.  $63^\circ$

Answer: B



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25. In the given figure,  $AB \parallel CD$ . If  $\angle APQ = 70^\circ$  and  $\angle PRD = 120^\circ$  then  $\angle QPR = ?$



A.  $50^\circ$

B.  $60^\circ$

C.  $40^\circ$

D.  $35^\circ$

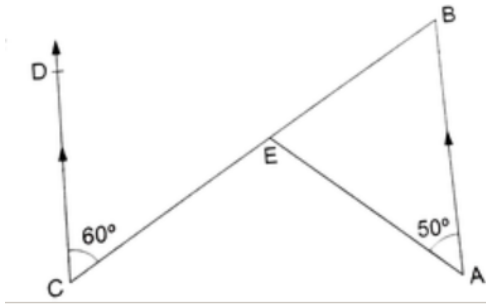
**Answer: A**



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26. In the given figure,  $AB \parallel CD$ . If  $\angle EAB = 50^\circ$  and  $\angle ECD = 60^\circ$  then

$$\angle AEB = ?$$



A.  $50^\circ$

B.  $60^\circ$

C.  $70^\circ$

D.  $55^\circ$

**Answer: C**

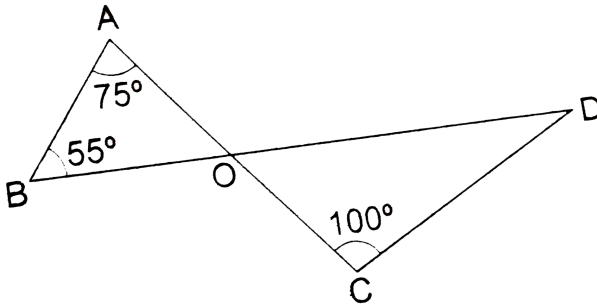


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27. In the given figure,

$$\angle OAB = 75^\circ, \angle OBA = 55^\circ \text{ and } \angle OCD = 100^\circ$$

.Then,  $\angle ODC = ?$



A.  $20^\circ$

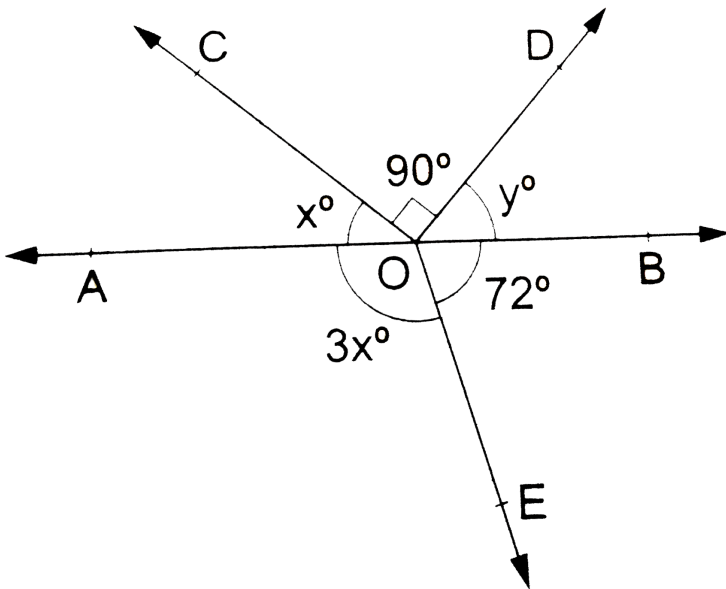
B.  $25^\circ$

C.  $30^\circ$

D.  $35^\circ$

**Answer: C**

28. In the adjoining figure, what is the value of  $y$  ?



A. 36

B. 54

C. 63

D. 72

**Answer: B**



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