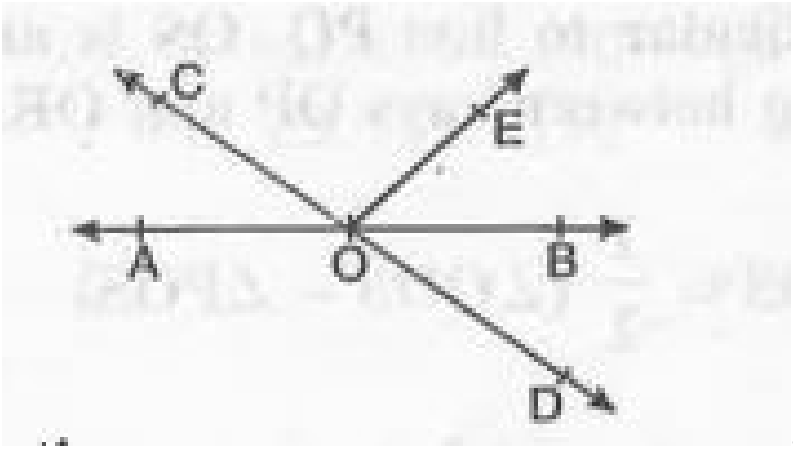
MATHS

BOOKS - MBD

Lines and Angles

Exercise

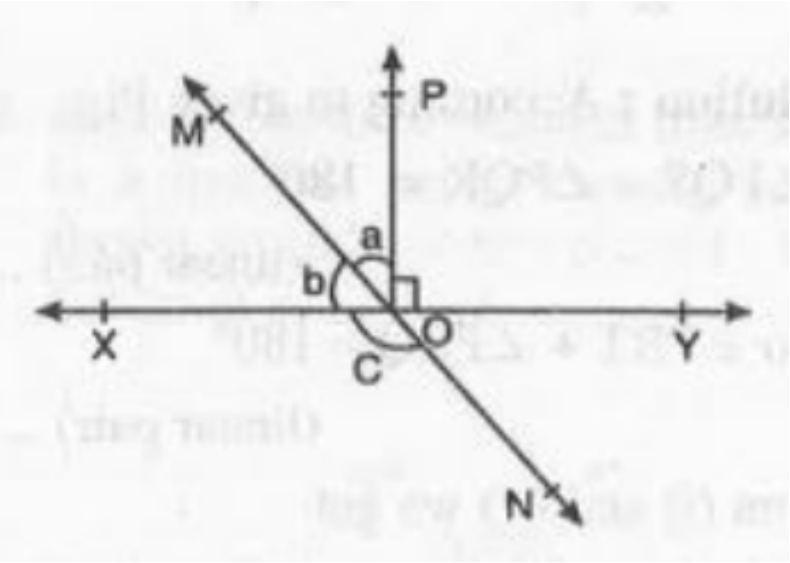
1. In Fig.



, lines AB and CD intersect at O. If $\angle AOC + \angle BOE = 70^\circ$ and $\angle BOD = 40^\circ$, find $\angle BOE$ and reflex $\angle COE$.

Watch Video Solution

2. In Fig.



lines XY and MN intersect at O. If $\angle POY = 90^\circ$ and $a : b = 2 : 3$, find C.

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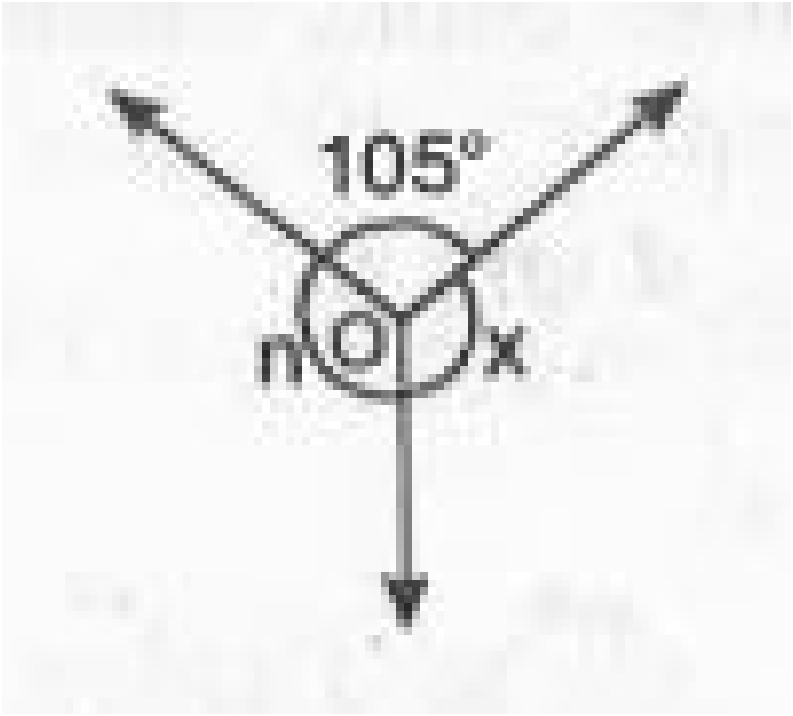
3. In given fig.



if

$n - x = 3^\circ$ find x and n.

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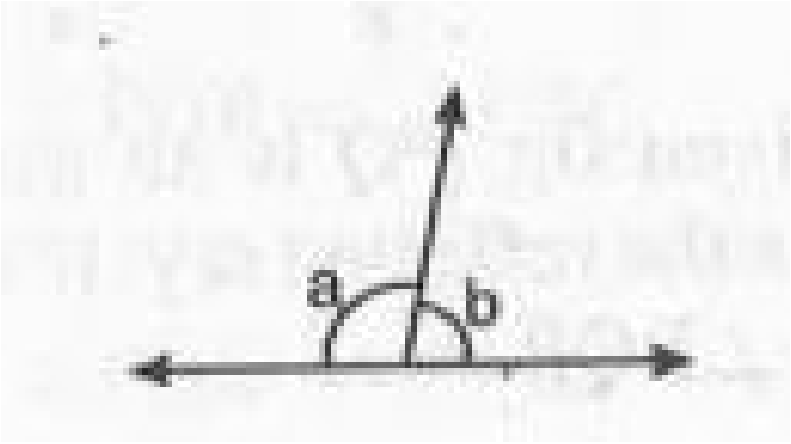
4. In fig.



if a is greater than b by one third of right angle. Find the values of a and b.

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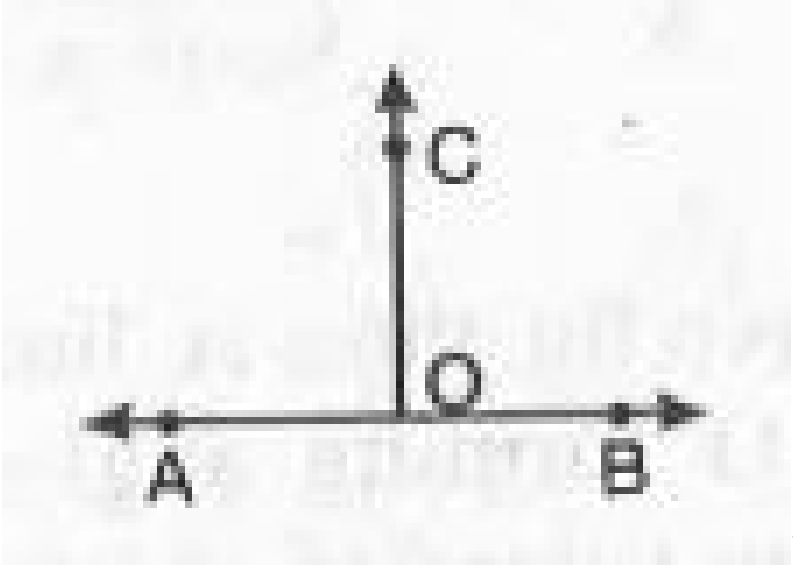
5. If ray OC stands on line AB such that $\angle AOC = \angle BOC$ (see fig.



) show that $\angle AOC = 90^\circ$.

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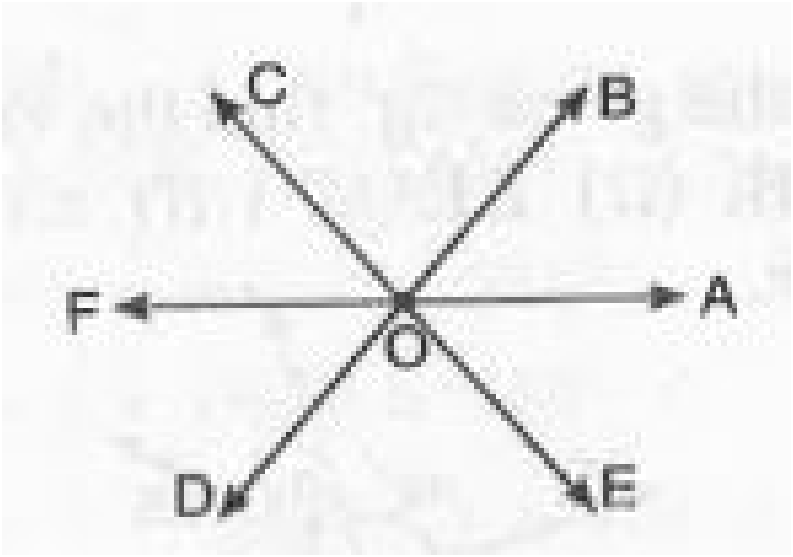
6. In given fig.



Rays OA, OB, OC, OD and OE have common initial point O. Show that $\angle AOB + \angle BOC + \angle COD + \angle DOE + \angle EOA = 360^\circ$.

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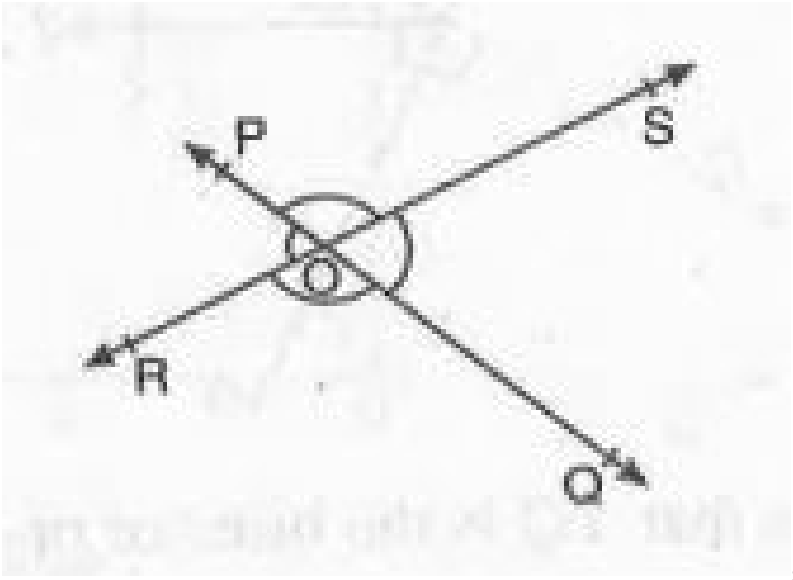
7. In the given Fig



, lines, PQ and RS intersect each other at point O. If $\angle POR : \angle ROQ = 5:7$, find the measure of all angles.

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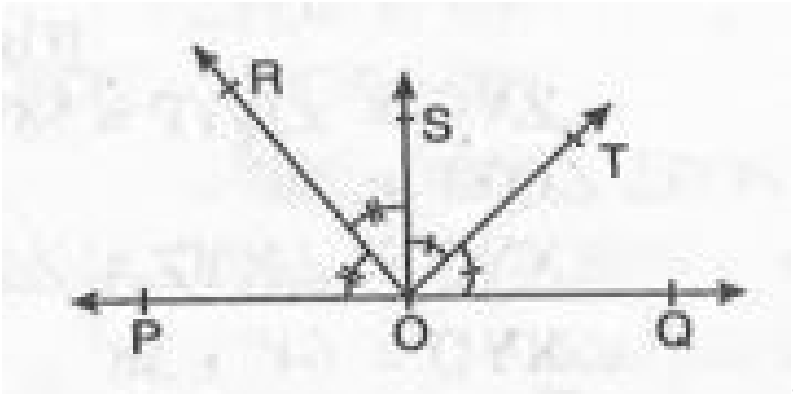
8. In the given fig.



, ray OS is on POQ. Rays OR and OT are the bisectors of $\angle POS$ and $\angle SOQ$ respectively. If $\angle POS = x$ find $\angle ROT$.

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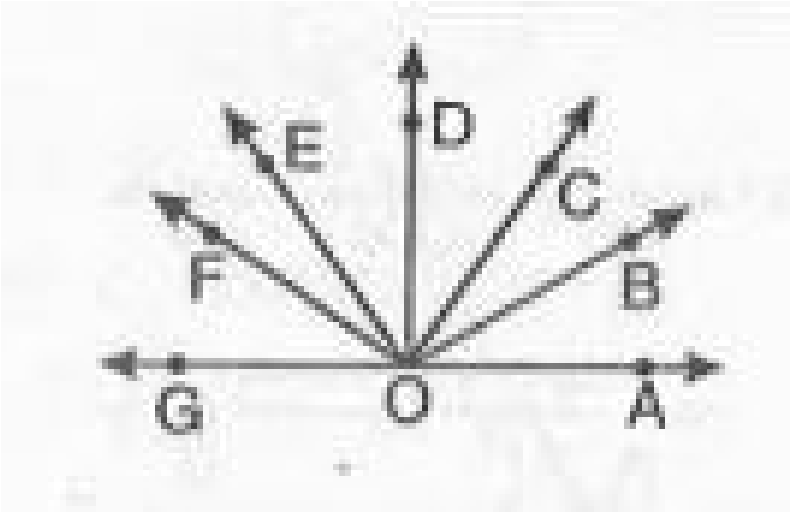
9. In fig.



$\angle AOF$ and $\angle FOG$ form linear pair. $\angle EOB = \angle FOC = 90^\circ$ and angleDOC = $\angle FOG$ = $\angle AOB$ = 30^@. Find the measure of $\angle FOE$, $\angle COB$ and $\angle DOE$.

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10. Match the following :

(*i*) sin (90°–A)	(*a*) Sin A
(*ii*) Cos 0°	(*b*) 0
(*iii*) Sin 0°	(*c*) 1
(*iv*) Cas (90°–A)	(*d*) Cos A

.

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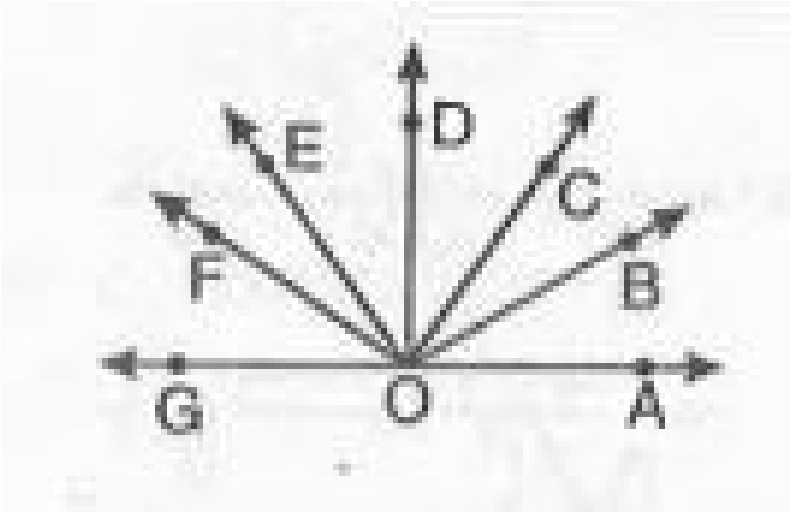
11. In fig.



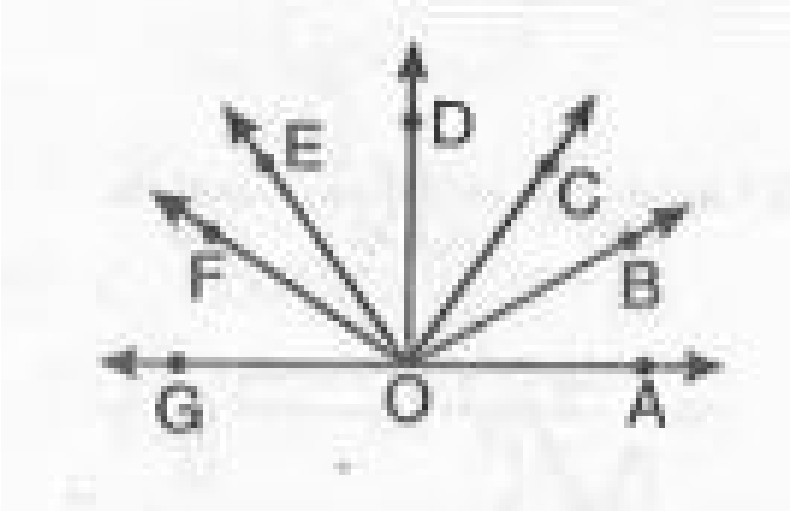
$\angle AOF$

and $\angle FOG$ form linear pair.

$\angle EOB = \angle FOC = 90^\circ$ and angleDOC = angleFOG = angleAOB = 30^@`.Name three pairs of adjacent complementary angles.

Watch Video Solution

12. In fig.



$\angle AOF$ and $\angle FOG$ form linear pair.

$\angle EOB = \angle FOC = 90^\circ$ and angleDOC = angleFOG = angleAOB = 30^@`.Name three pairs of complementary angles other than those covered in adjacent complementary angles.

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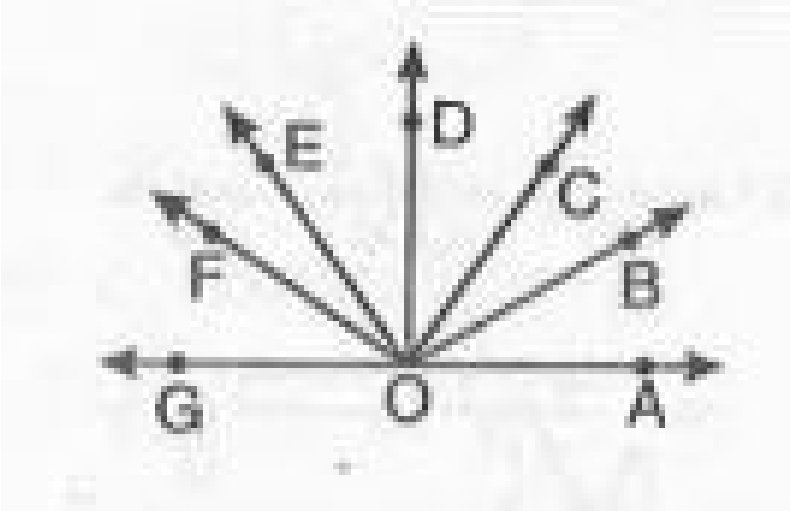
13. In fig.



$\angle AOF$ and $\angle FOG$ form linear pair.

$\angle EOB = \angle FOC = 90^\circ$ and angleDOC = angleFOG = angleAOB = 30^@`.Name three pairs of adjacent complementary angles.

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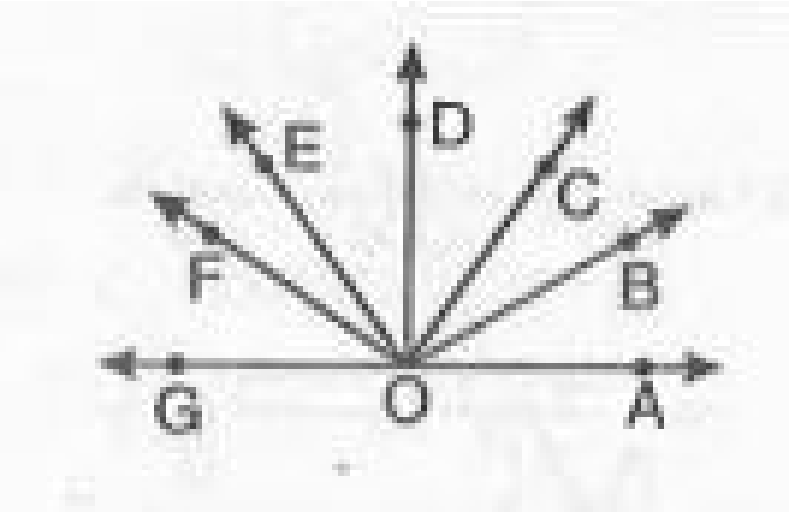
14. In fig.



$\angle AOF$ and $\angle FOG$ form linear pair.

$\angle EOB = \angle FOC = 90^\circ$ and angleDOC = angleFOG =

angleAOB = 30^@`.Name three pairs of supplementary angle.

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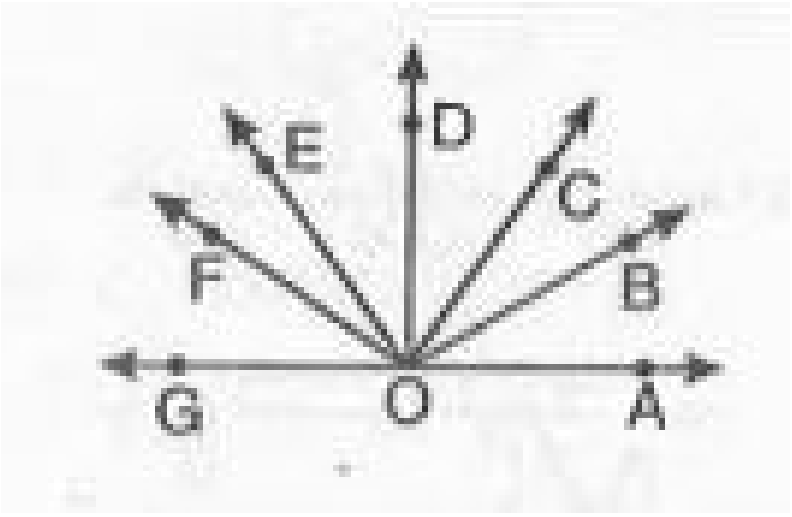
15. In fig.



$\angle AOF$ and $\angle FOG$ form linear pair. $\angle EOB = \angle FOC = 90^\circ$ and angleDOC = angleFOG = angleAOB = 30^@`.Name three pairs of complementary

angles other than those covered in adjacent complementary angles.

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16. In given fig.

 AB and CD are two intersecting lines. OP and OQ are respectively bisectors of $\angle BOD$ and $\angle AOC$. Show that OP and OQ are opposite rays.

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17. Angles forming a linear pair are supplementary.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

18. If two adjacent angles are equal, then each angle measures 90°.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

19. Angles forming a linear pair can both the acute angles.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

20. Two distinct lines in a plane can have two points in common.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

21. If angles forming a linear pair are equal, then each of these angles is of measure 90°.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

22. If two lines intersect and if one pair of vertically opposite angles is formed by acute angles, then the other pair of vertically opposite angles will be formed by obtuse angles.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

23. If two lines intersect and one of the angles so formed is a right angle, then the other three angles will not be right angles.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

24. Two distinct points in a plane determine a ..... Line.

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25. Two distinct ..... in a plane cannot have more than one point in common.

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26. Given a line and a point, not on the line, there is one and only ..... line which passes through the given point and is to the given line.

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27. A line separates a plane into ..... parts namely the two ..... And the ..... Itself.

Watch Video Solution

28. If one angle of a linear pair is acute, then its other angle will be ..... .

Watch Video Solution

29. If a ray stands on a line, then the sum of the two adjacent angles so formed is..... .

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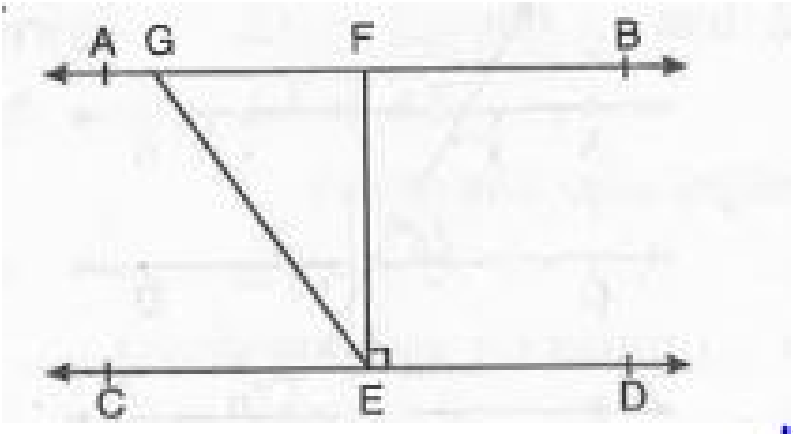
30. If the sum of two adjacent angles is 180°, then the .....arms of the two angles are opposite rays.

Watch Video Solution

31. If two lines intersect, then vertically opposite angles are..... .

Watch Video Solution

32. In fig.



, if $ABIICD$, $EF \perp CD$ and $\angle GED = 126^\circ$, find $\angle AGE$, $\angle GEF$ and $\angle FGE$.

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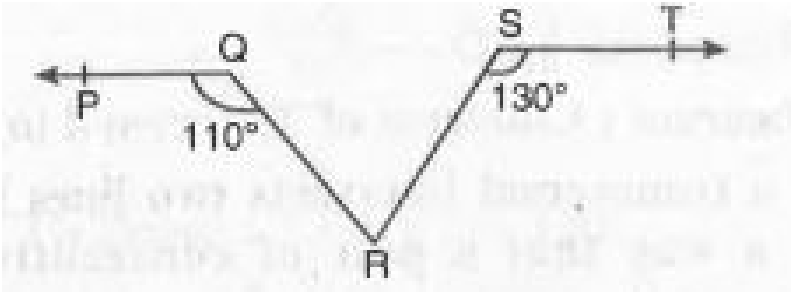
33. In fig.



,

if $PQIIST$, $\angle PQR = 110^\circ$ and $\angle RST = 130^\circ$, find $\angle QRS$.

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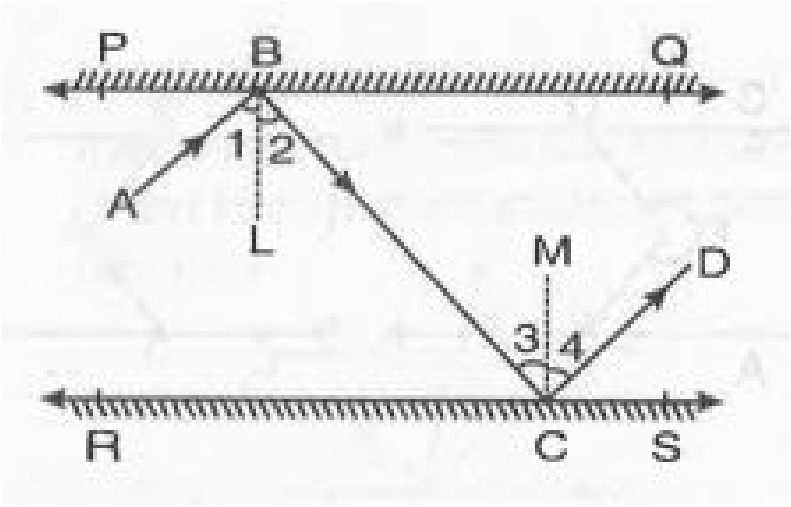
34. In fig.



, PQ and RS are two mirrors placed parallel to each other. An incident ray AB strikes the mirror PQ at B, the reflected ray move along the path BC and strikes the mirror RS at C and again reflects back along CD. Prove that AB II CD.

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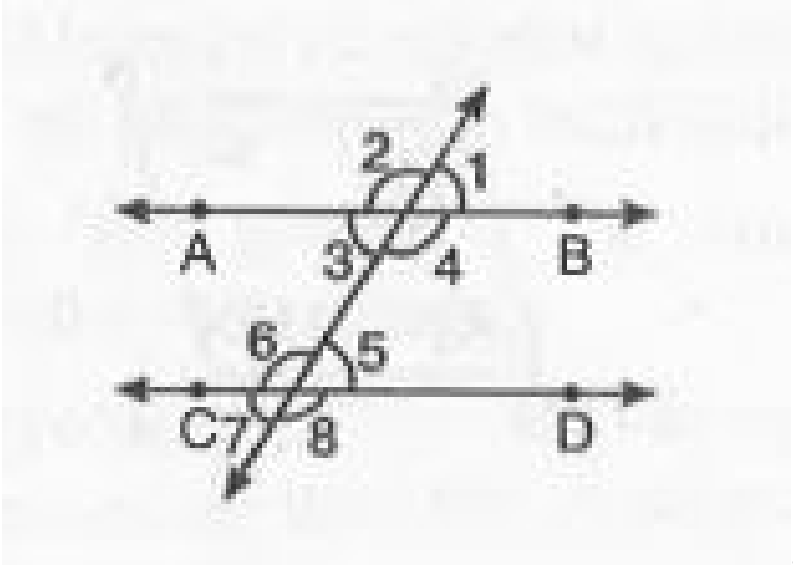
35. In given fig.



, given $AB \| CD$ if $\angle 1 = (120 - x)^\circ$ and $\angle 5 = 5x^\circ$, find the measures of $\angle 1$ and $\angle 5$.

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36. If two parallel lines are intersected by a transversal, then each pair of corresponding angles are ..... .

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37. If two parallel lines are intersected by a a transversal, then interior angles on the same side of the transversal are ..... .

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38. Two lines are perpendicular to the same line are ..... to each other.

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39. If a transversal intersects a pair of lines in such a way that a pair of alternate angles are equal, then two lines are ..... .

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40. Two lines parallel to the same line are ..... to each other.

Watch Video Solution

41. If a transversal intersects a pair of lines in such a way that the sum of interior angles on the same side

of the transversal is 180°, then the lines are ..... .

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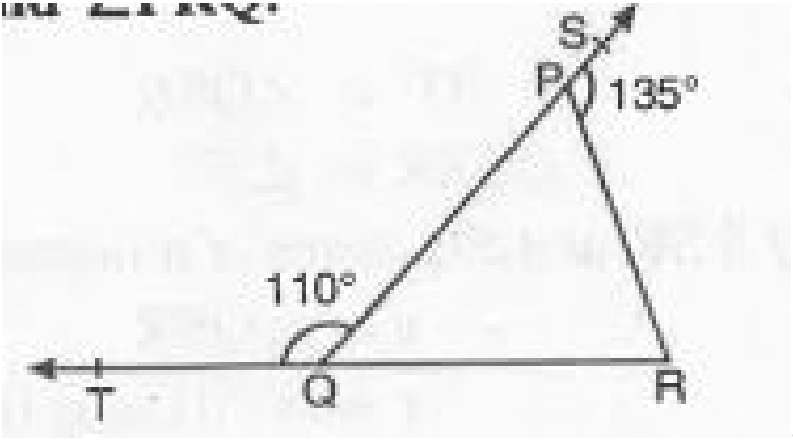
42. In the given fig.



, sides QP and RQ of ΔPQR aer produced to points S and T respectively. If $\angle SPR = 135^\circ$ and $\angle PQT = 110^\circ$, find $\angle PRQ$.

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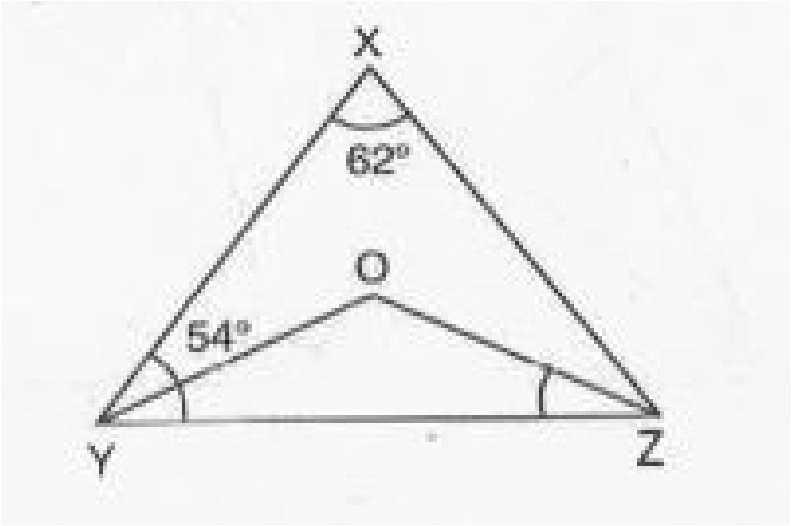
43. In the given fig.



$\angle X = 62^\circ$, $\angle XYZ = 54^\circ$. If YO and ZO are the bisectors of $\angle XYZ$ and $\angle XZY$ respectively of ΔXYZ, find $\angle OZY$ and $\angle YOZ$.

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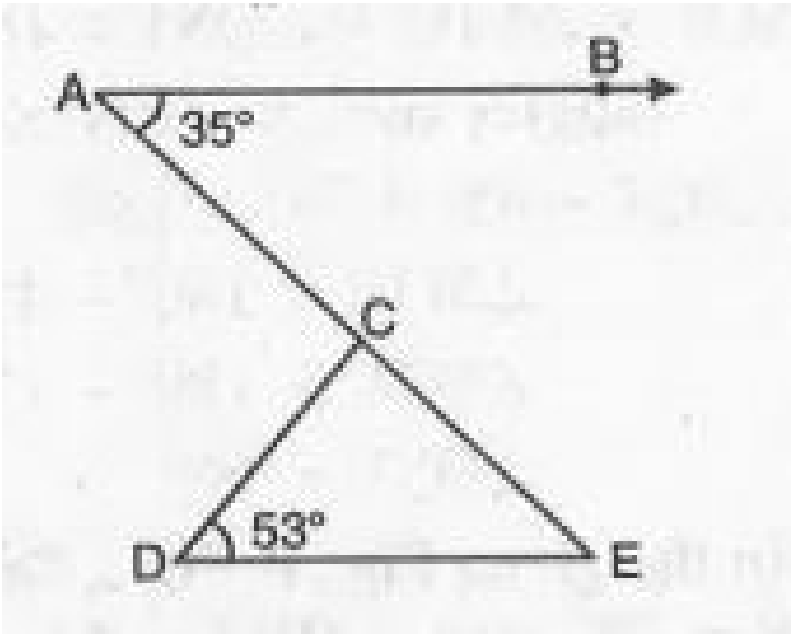
44. In the given Fig.



if $ABIIDE$, $\angle BAC = 35^\circ$ and $\angle CDE = 53^\circ$, find $\angle DCE$.

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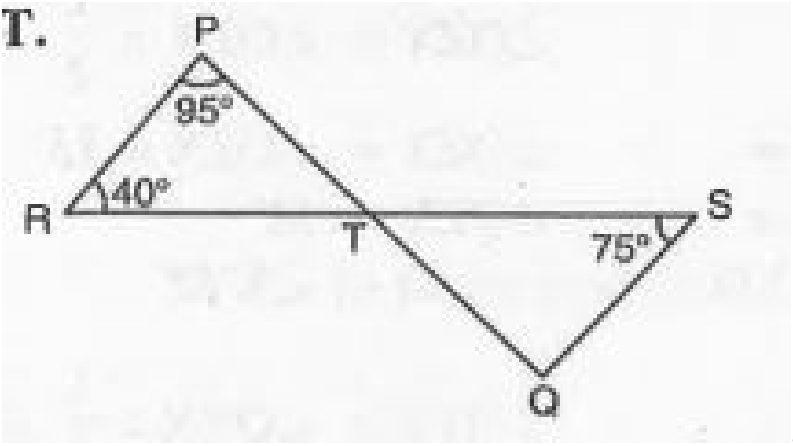
45. In the given Fig.



, if lines PQ and RS intersect at point T, such that $\angle PRT = 40^\circ$, $\angle RPT = 95^\circ$ and $\angle TSQ = 75^\circ$ find $\angle SQT$.

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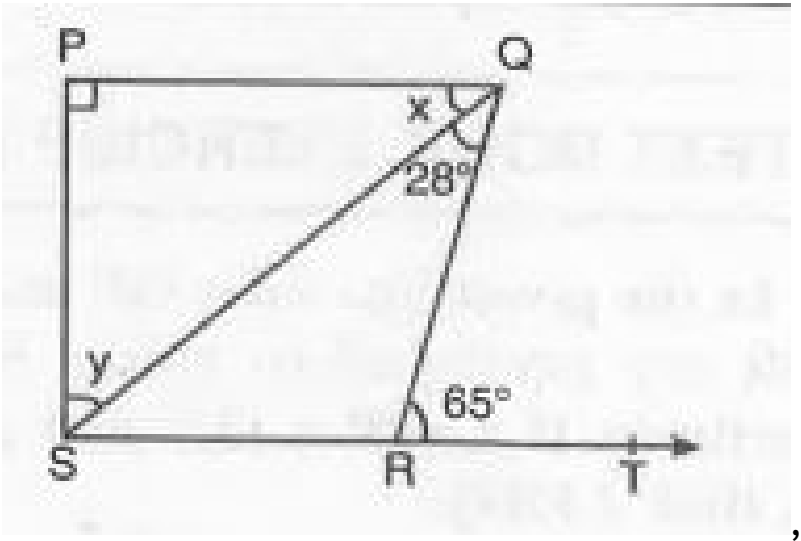
46. In the given Fig.



, if $PQ \perp PS$, $PQIISR$, $\angle SQR = 28^\circ$ and $\angle QRT = 65^\circ$, then find the values of x and y.

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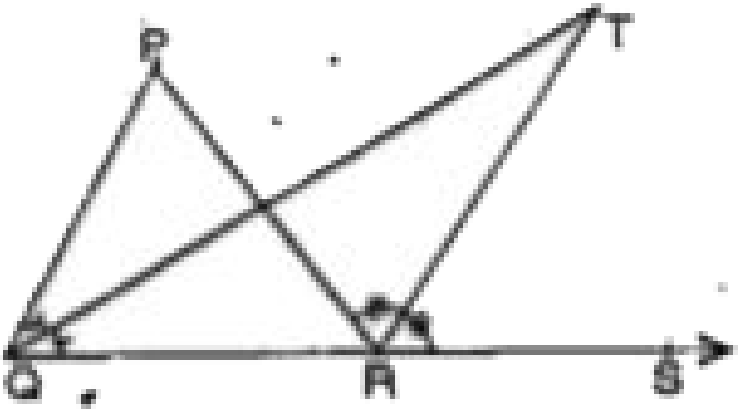
47. In Fig., the side QR of ΔPQR is producted to a point S. If the bisectors of $\angle PQR$ and $\angle PRS$ meet at

point T, then prove that

$$\angle QTR = \frac{1}{2}\angle QPR.$$



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48. If the angles of triangle are in the ratio of $2:3:4$, find the three angles.

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49. Prove that if one angle of a triangle is equal to the sum of the other two angles, the triangle is right angled.

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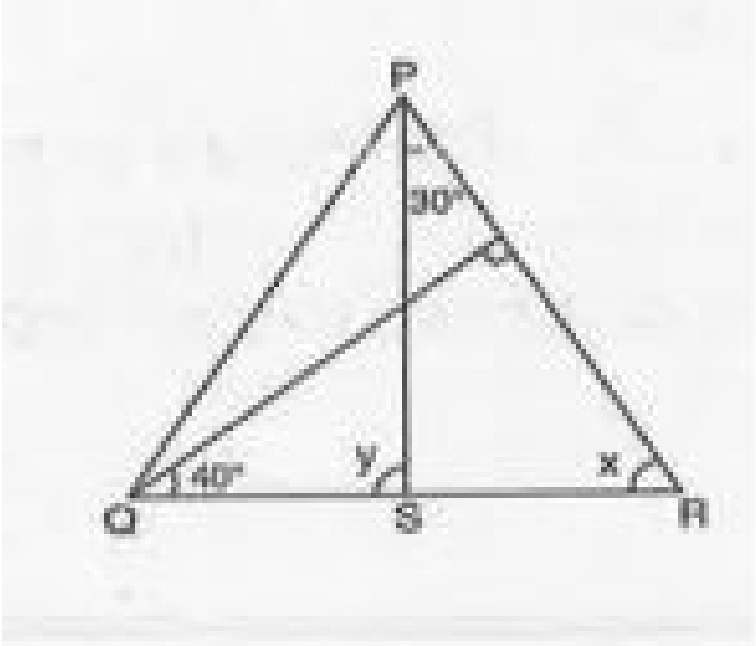
50. In the given Fig



, if

$QT \perp PR, \angle TQR = 40^\circ$ and $\angle SPR = 30^\circ$, find the value of x and y.

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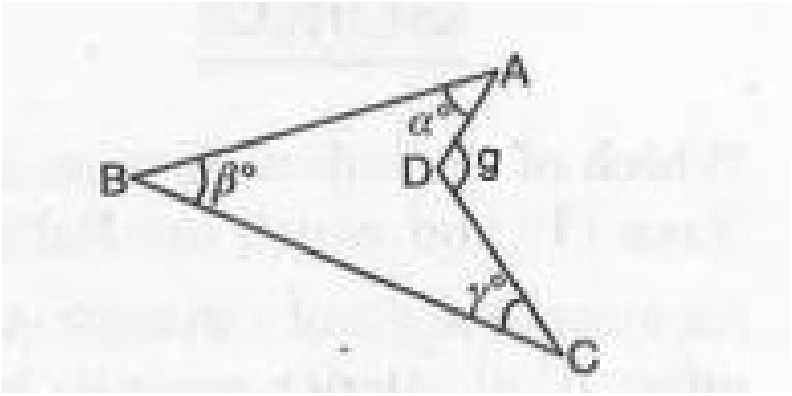
51. In the given figure



prove that $g = \alpha + \beta + \gamma$.

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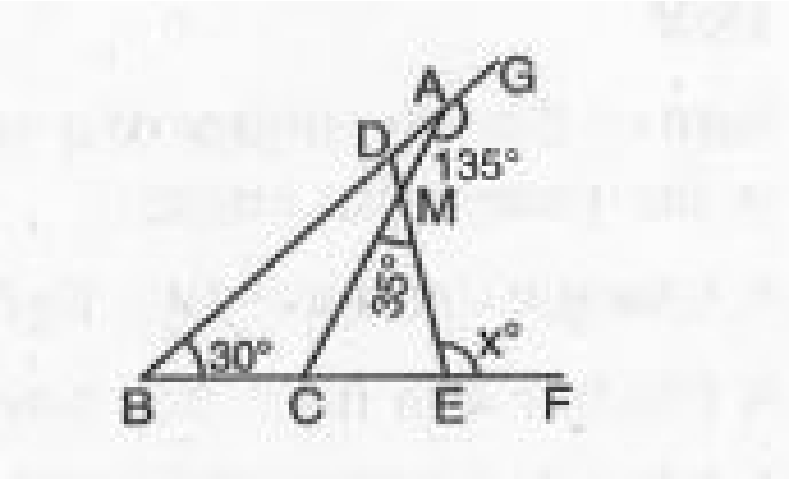
52. In given fig.



find x.

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53. Prove that sum of all the interior angles of a pentagon is 540°.

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54. Prove that the angle between internal bisector of one base angle and the external bisector of the other is equal to one-half of the vertical angles.

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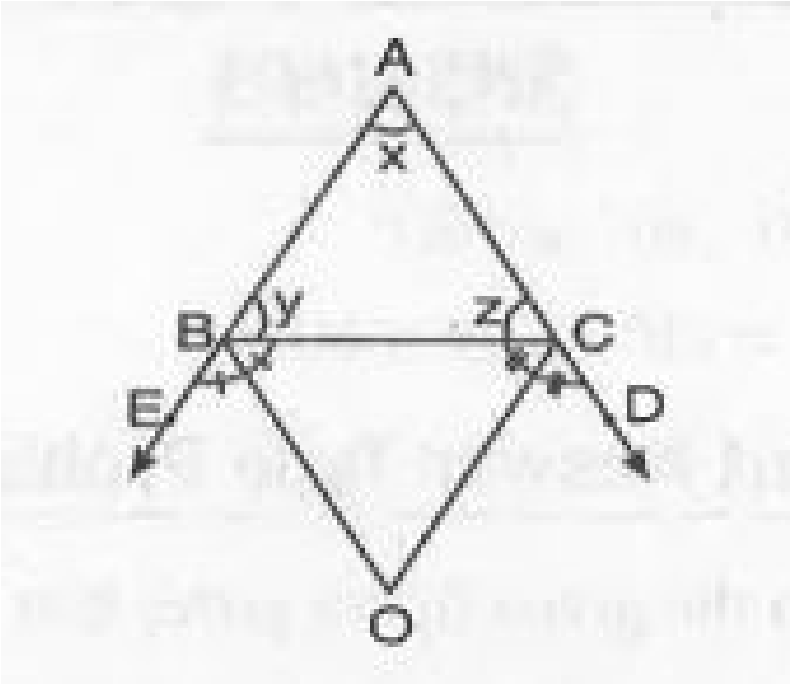
55. In the given Fig



, Sides AB

and AC of a ΔABC are produced to E and D respectively. If respective bisectors BO and CO of $\angle CBE$ and $\angle BCD$ intersect each other at point O, prove that $\angle BOC = 90^\circ - \frac{1}{2}\angle BAC$.

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56. An exterior angle of a triangle is less than either of its interior opposite angles.

A. 1

B.

C.

D.

Answer:

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57. Sum of the three angles of a triangle is 180°.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

58. Sum of the four angles of a quadrilateral is the four right angles.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

59. A triangle can have two right angles.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

60. A triangle can have two acute angles.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

61. A triangle can have two obtuse angles

A. 1

B.

C.

D.

Answer:

Watch Video Solution

62. An exterior angle of a triangle is equal to the sum of the two interior opposite angles.

A. 1

B.

C.

D.

Answer:

Watch Video Solution

63. Sum of the three angles of a triangle is ..... .

Watch Video Solution

64. An exterior angle of a triangle is equal to the two ..... opposite angles.

Watch Video Solution

65. An exterior angle of a triangle is always ..... than either of the interior opposite angles.

Watch Video Solution

66. A triangle cannot have more than ..... right angles

Watch Video Solution

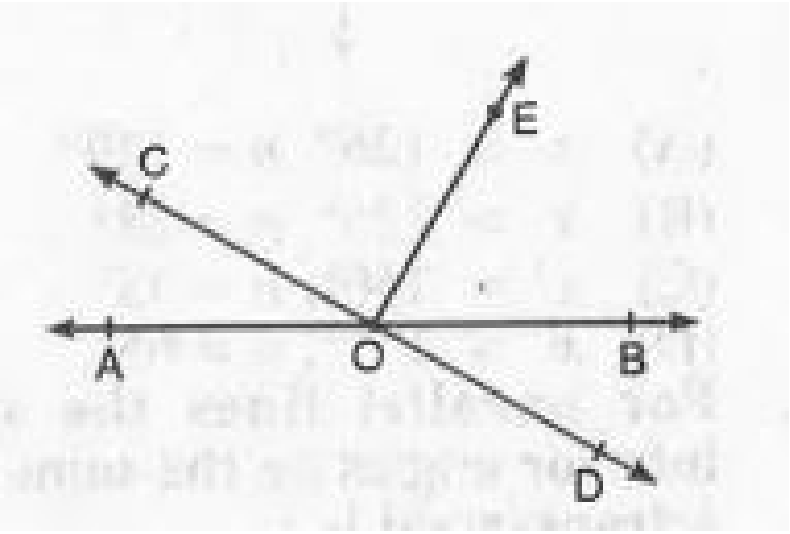
67. A triangle cannot have more than ..... obtuse angles.

Watch Video Solution

68. Sum of the angles of a quadrilateral is ..... .

Watch Video Solution

69. In fig.



AB and CD intersect each other at point O. If $\angle AOC + \angle BOE = 70^\circ$ and $\angle BOD = 40^\circ$ then the value of $\angle BOE$ and reflex $\angle COE$ are :

A. $\angle COE = 250^\circ, \angle BOE = 30^\circ$

B. $\angle COE = 70^\circ, \angle BOE = 110^\circ$

C. $\angle COE = 30^\circ, \angle BOE = 110^\circ$

D. $\angle COE = 50^\circ, \angle BOE = 120^\circ$.

Answer:

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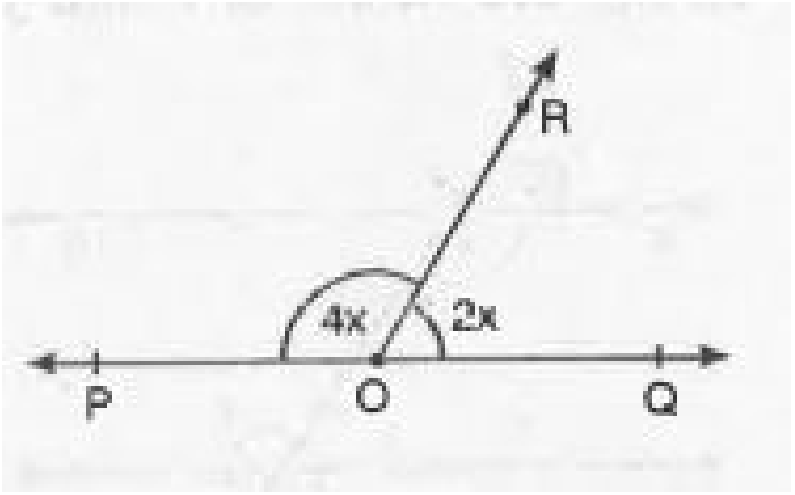
70. In fig.



POQ is a

line, $\angle POR = 4x$ and $\angle QOR = 2x$ then the value of x is :

A. 20°

B. 50°

C. 30°

D. 90°.

Answer:

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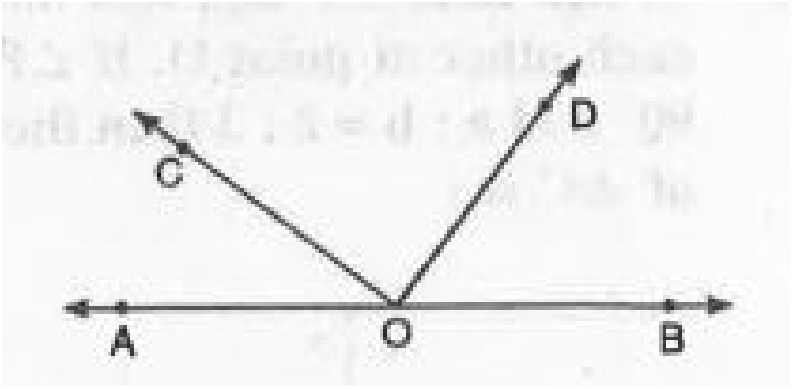
71. In the given fig.



if $\angle AOC + \angle BOD = 75^\circ$ then the value of $\angle COD$ is :

A. 120°

B. 105°

C. 130°

D. 75°.

Answer:

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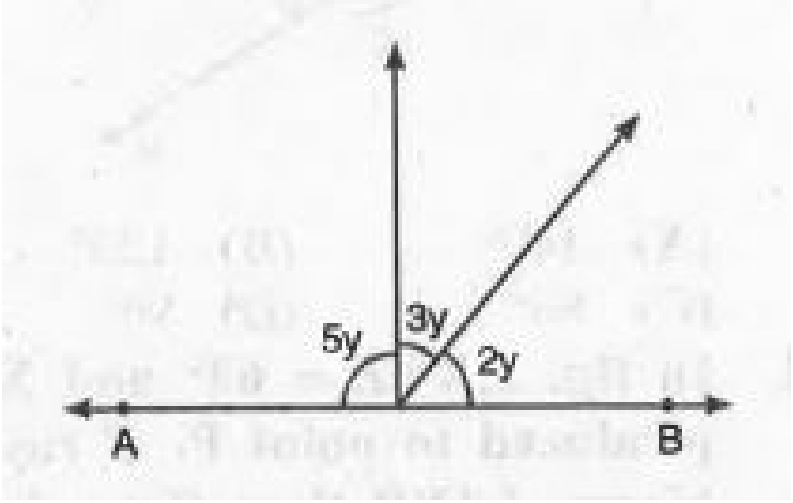
Watch Video Solution

72. In the fig.



value of y is :

A. 90°.

B. 18°

C. 30°

D. 60°.

Answer:

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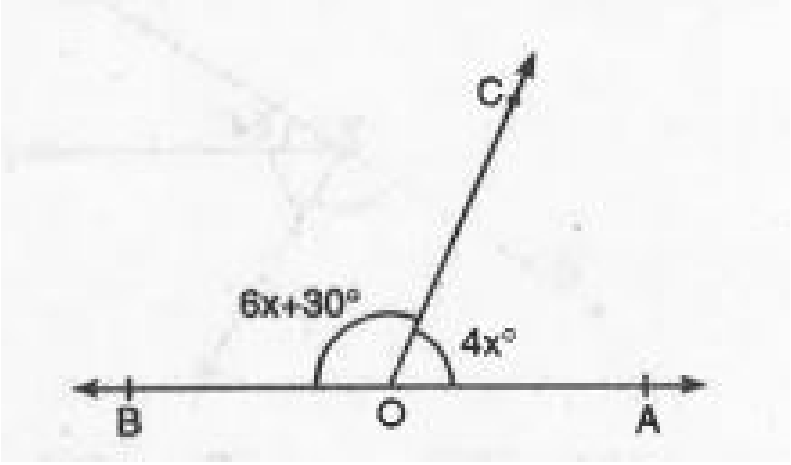
73. In the given fig.



the value of x is :

A. 15°

B. 30°

C. 45°

D. 60°.

Answer:

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74. In fig. , $\angle POR$ and $\angle QOR$ form a linear pair if $a - b = 80^\circ$ then values of a and b are :

A. $a = 130^\circ, b = 50^\circ$

B. $a = 50^\circ, b = 130^\circ$

C. $a = 60^\circ, b = 120^\circ$

D. $a = 40^\circ, b = 140^\circ$.

Answer:

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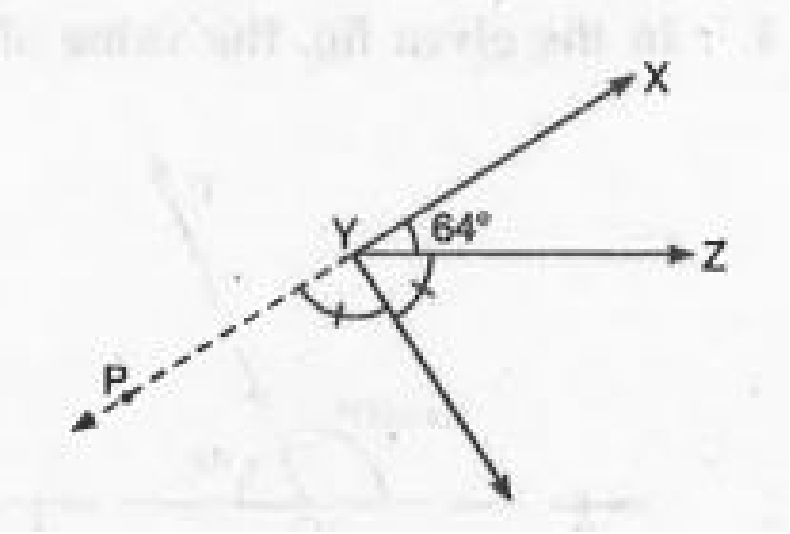
75. In fig.



$\angle XYZ = 64^\circ$ and XY is produced to point P. If ray YQ bisect $\angle ZYP$ then the value of $\angle XYQ$ is :

A. 122°

B. 126°

C. 302°

D. 258°.

Answer:

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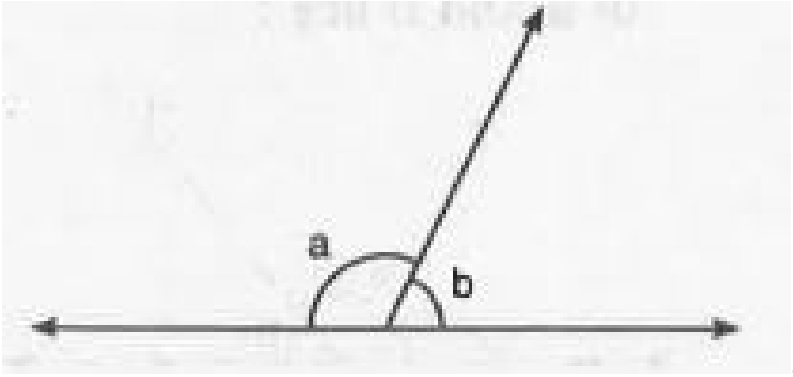
76. In fig.



, b is more

than one-third of a right angle than a. The values of a and b are :

A. $a = 95^\circ, b = 85^\circ$

B. $a = 105^\circ, b = 75^\circ$

C. $a = 65^\circ, b = 115^\circ$

D. $a = 60^\circ, b = 120^\circ.$

Answer:

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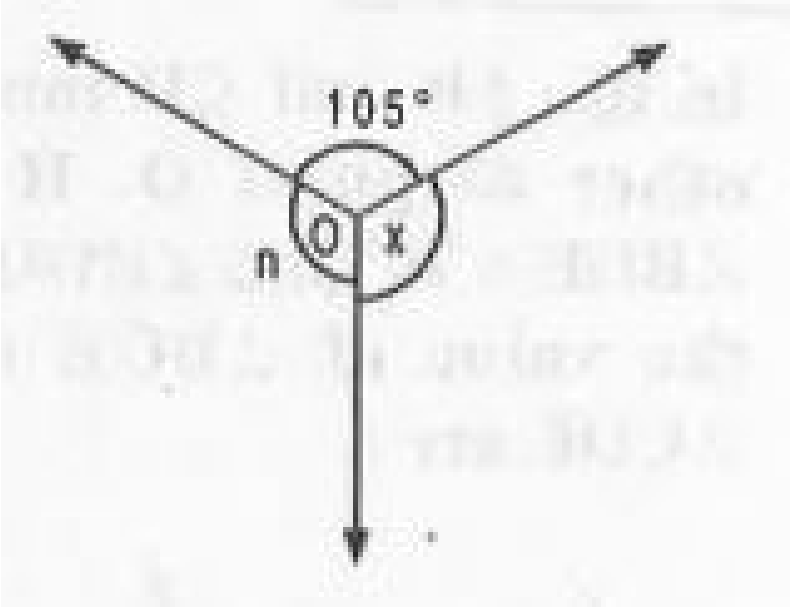
77. In fig.



$n - x = 3^\circ$ then values of x and n are :

A. $x = 126^\circ, n = 129^\circ$

B. $x = 125^\circ, n = 28^\circ$

C. $x = 150^\circ, n = 95^\circ$

D. $x = 135^\circ, n = 65^\circ.$

Answer:

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78. For parallel lines the sum of interior angles on the same side of a transversal is :

A. 180°

B. 90°

C. (A) and (B) both

D. None.

Answer:

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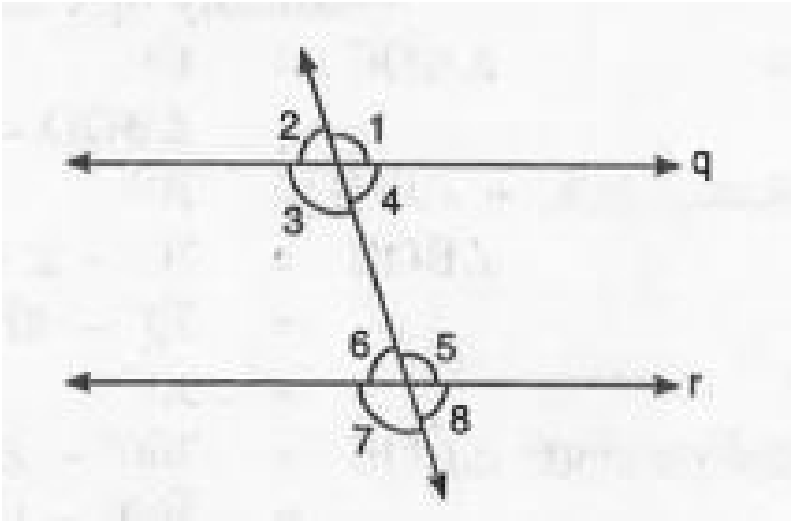
79. In fig.



$qIIr$ and p is transversal. If $\angle 1$ and $\angle 2, 3:2$ then the values of $\angle 3$ and $\angle 4$ are :

A. $\angle 3 = 108^\circ, \angle 4 = 72^\circ$

B. $\angle 3 = 72^\circ, \angle 4 = 108^\circ$

C. $\angle 3 = 75^\circ, \angle 4 = 105^\circ$

D. $\angle 3 = 85^\circ, \angle 4 = 95^\circ$.

Answer:

Watch Video Solution

80. In fig. the values of x and y are :

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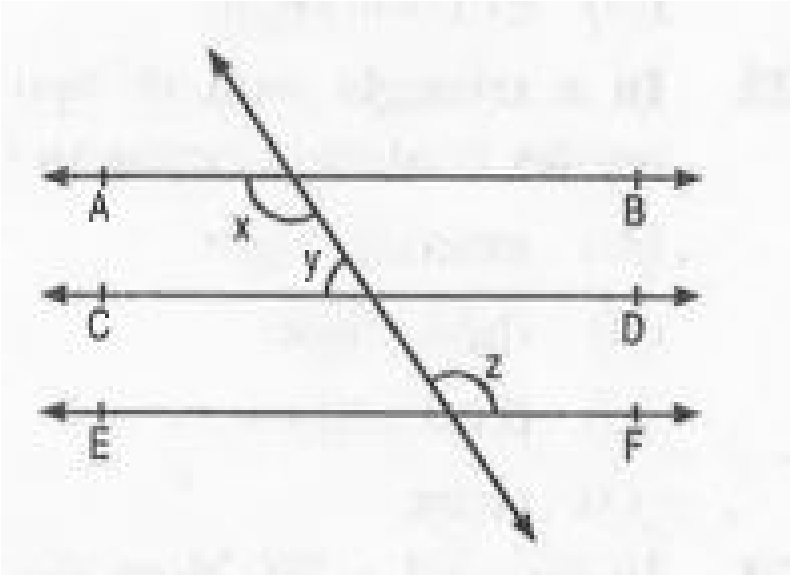
81. In fig.



, if $AB \parallel CD, CD \parallel EF$ and $y : z = 3 : 7$ then value of x is :

A. $x = 126^\circ$

B. $x = 120^\circ$

C. $x = 58^\circ$

D. $x = 62^\circ$.

Answer:

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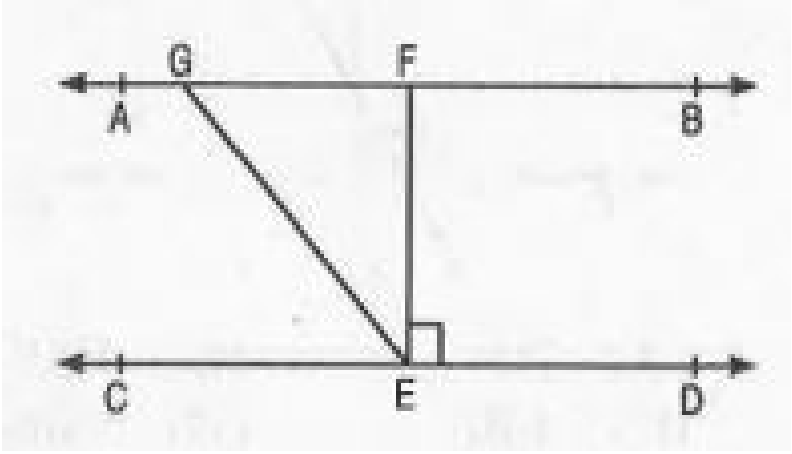
82. In fig.



, if $AB \| CD, EF \perp CD$ and $\angle GED = 126^\circ$ then the value of $\angle AGE$ is :

A. 126°

B. 120°

C. 128°

D. 54°.

Answer:

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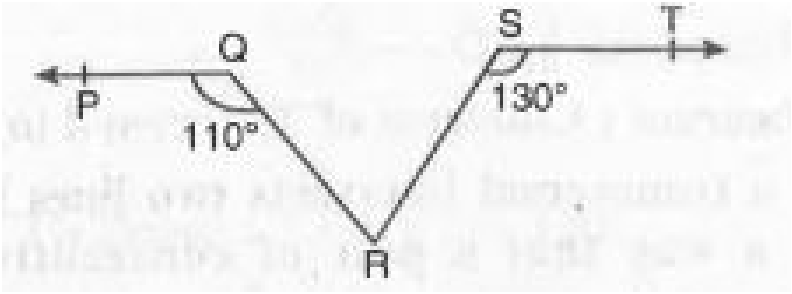
83. In fig.



,

if $PQIIST$, $\angle PQR = 110^\circ$ and $\angle RST = 130^\circ$, find $\angle QRS$.

A. 60°

B. 120°

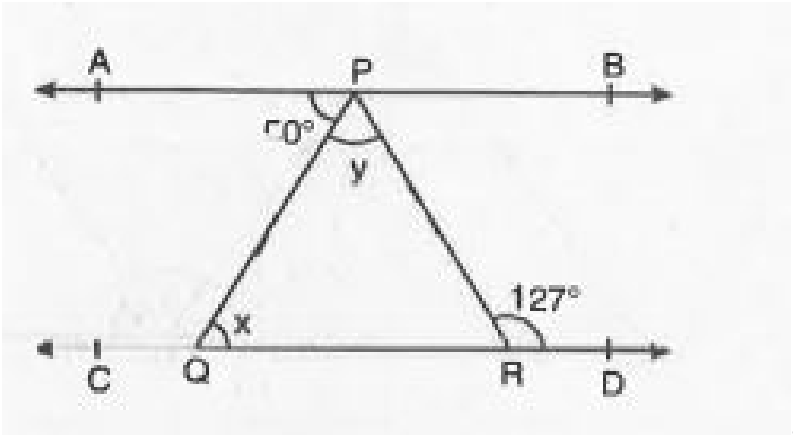
C. 80°

D. 90°.

Answer:

Watch Video Solution

84. In fig.



, if $AB \parallel CD, \angle APQ = 50^\circ$ and $\angle PRD = 127^\circ$ then values of x and y are :

A. $x = 50^\circ, y = 77^\circ$

B. $x = 40^\circ, y = 85^\circ$

C. $x = 60^\circ, y = 90^\circ$

D. $x = 85^\circ, y = 75^\circ.$

Answer:

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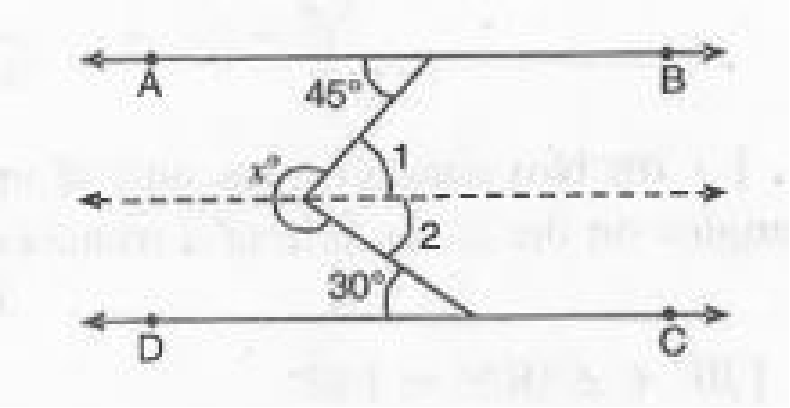
85. In fig



,

$AB \| CD$, the value of x is :

A. 185°

B. 280°

C. 285°

D. 195°.

Answer:

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86. For two parallel lines sum of interior angles on the same side of a transversal, is ..... .

A. 90°

B. 120^2

C. 80°

D. 180°.

Answer:

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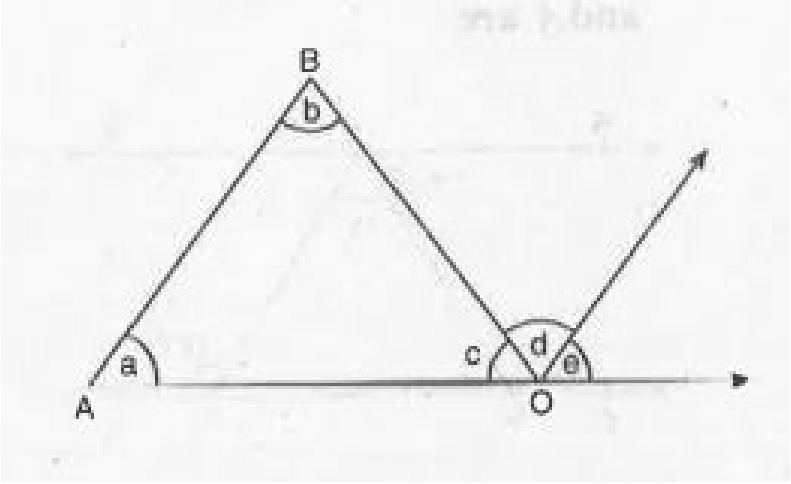
87. In fig.



, the sum of $\angle a$ and $\angle b$ is :

A. $\angle c + \angle d$

B. $\angle d + \angle e$

C. $\angle b + \angle c$

D. $\angle a + \angle c$.

Answer:

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88. In a triangle interior opposite angle is always less than :

A. any angle of the triangle

B. Opposite angle

C. right angle

D. exterior angle.

Answer:

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89. In a triangle sum of two interior angles is always equal to :

A. exterior angle

B. right angle

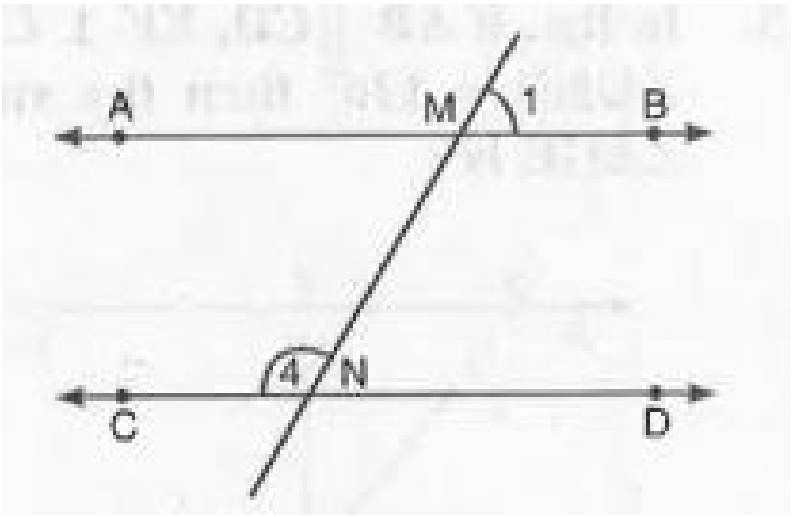
C. third angle

D. None.

Answer:

Watch Video Solution

90. In fig.



,

$\angle 1 = 70^\circ$ then the value of $\angle 4$ is :

A. 70°

B. 110°

C. 140°

D. None.

Answer:

Watch Video Solution

91. In a triangle exterior angle is always greater than :

A. interior opposite angles

B. third angle

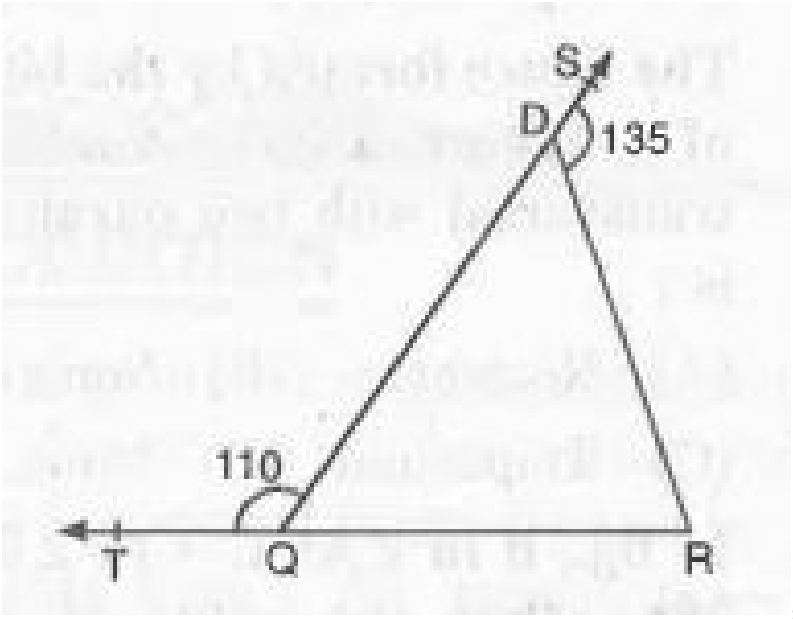
C. 90°

D. None.

Answer:

Watch Video Solution

92. In fig.



, the sides QP and RQ of a ΔPQR are produced to points S and T respectively. If $\angle SPR = 135^\circ$ and $\angle PQT = 110^\circ$ then the value of $\angle PRQ$ is :

A. 75°

B. 65°

C. 85°

D. 95°.

Answer:

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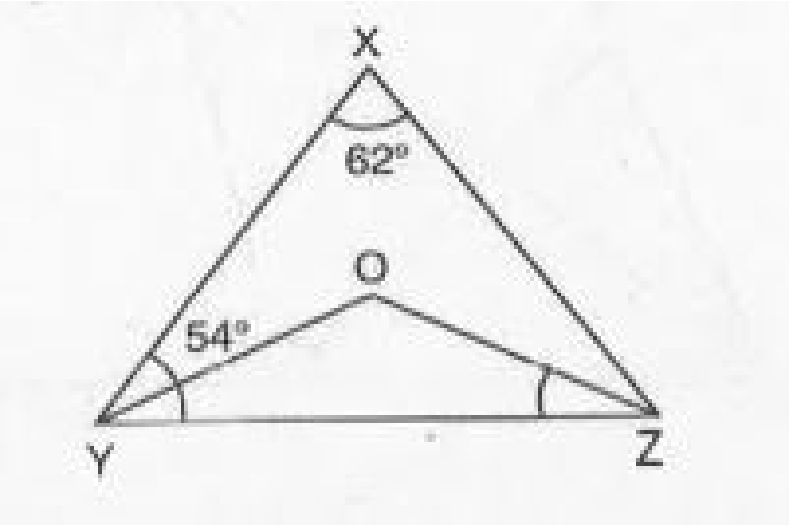
93. In the given fig.



$\angle X = 62^\circ$, $\angle XYZ = 54^\circ$. If YO and ZO are the

bisectors of $\angle XYZ$ and $\angle XZY$ respectively of ΔXYZ, find $\angle OZY$ and $\angle YOZ$.

A. $32^\circ, 121^\circ$

B. $45^\circ, 115^\circ$

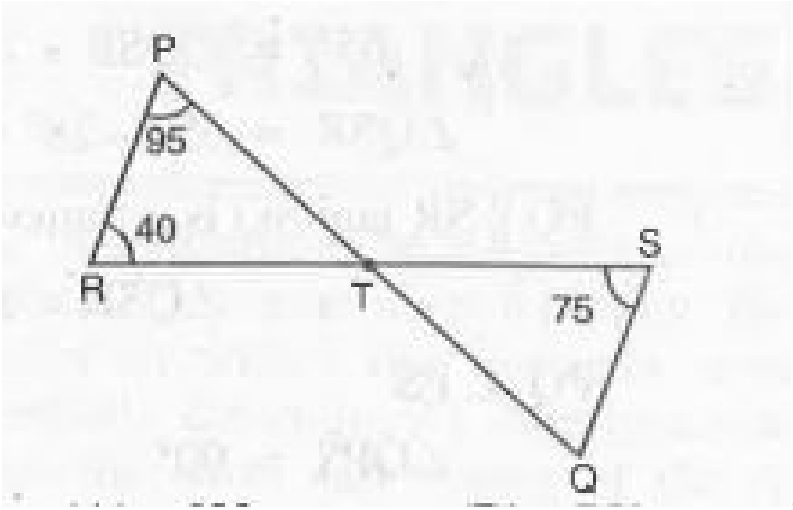
C. $38^\circ, 122^\circ$

D. $46^\circ, 124^\circ$.

Answer:

Watch Video Solution

94. In fig.



, if lines PQ and RS intersect each other at point T such that $\angle PRT = 40^\circ, \angle RPT = 95^\circ$ and $\angle TSQ = 75^\circ$ then the value of `angleSQT is :

A. 60°

B. 75°

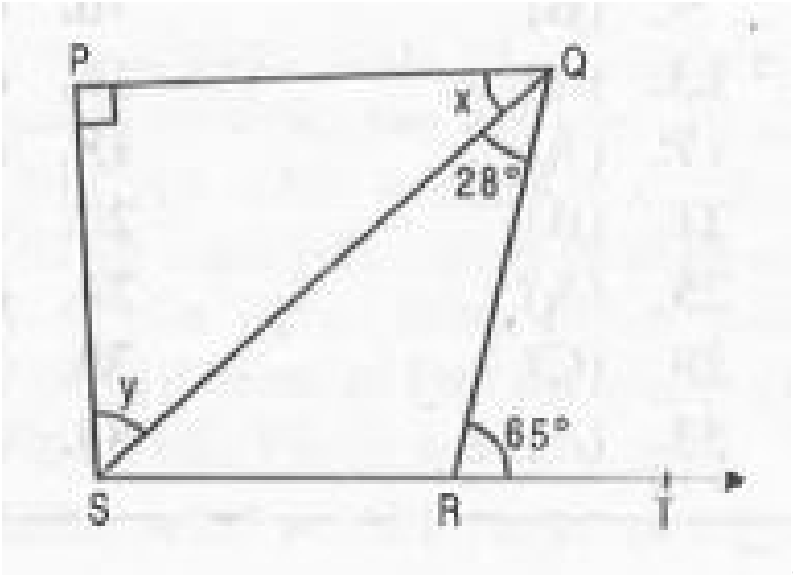
C. 85°

D. 65°.

Answer:

Watch Video Solution

95. In fig.



, if

$PQ \perp PS, \quad PQ \| SR, \quad \angle SQR = 28^\circ$ and $\angle QRT = 65^\circ$ then the values of x and y are :

A. $x = 37^\circ$,y=53^@`

B. $x = 63^\circ$,y=37^@`.

C.

D.

Answer:

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