MATHS

NCERT - NCERT MATHEMATICS(ENGLISH)

LINES AND ANGLES

Exercise 6 3

1. In Figure, if lines PQ and RS intersect at a point T such that

$\angle PRT = 40^\circ$, $\angle RPT = 95^\circ$ *and* $\angle TSQ = 75^\circ$, find $\angle SQT$.

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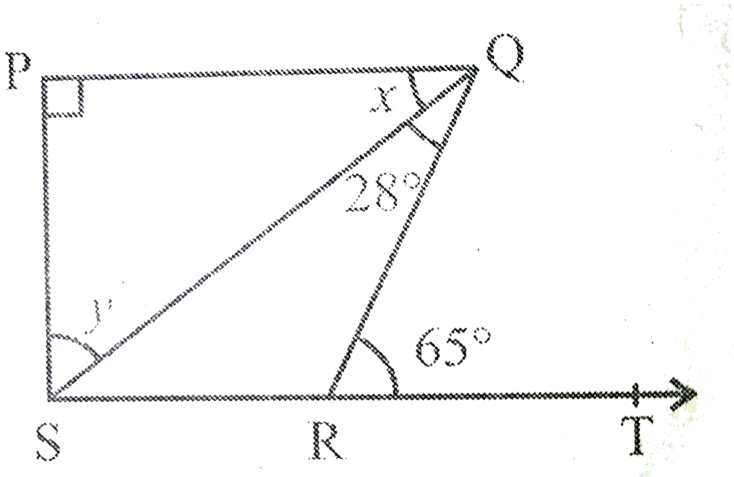
2. In Fig. 6.43, if $PQ \perp PS, PQ \| SR$, $\angle SQR = 28^\circ$ and $\angle QRT = 65^\circ$, then find the values of x and y.



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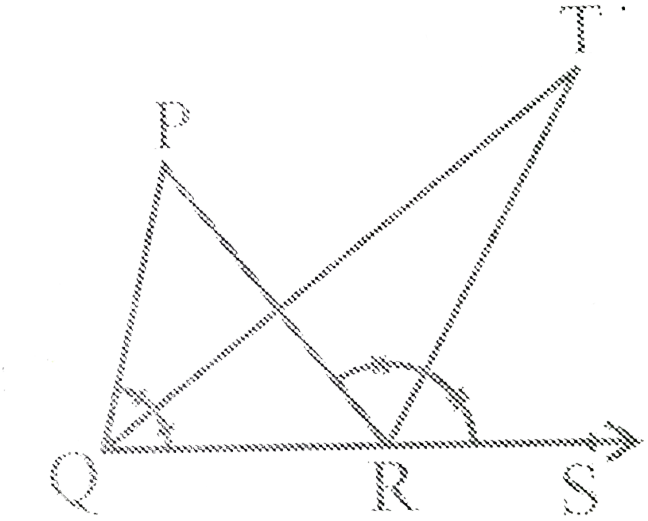
3. In Fig. , the side QR of $\triangle$ PQR is produced to a point S. If the bisectors of $\angle PQR$ and $\angle PRS$ meet at point T, then prove that $\angle QTR = \frac{1}{2}\angle QPR.$



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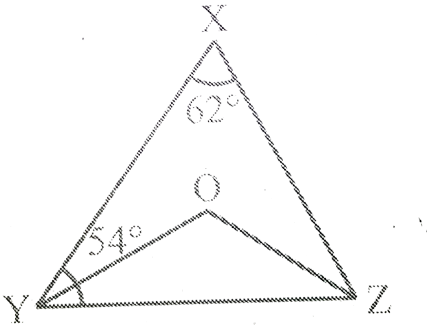
4. In Fig. 6.40, $\angle X = 62^\circ$, $\angle XYZ = 54^\circ$. If YO and ZO are the bisectors of $\angle XYZ$ and $\angle XZY$ respectively of ΔXYZ, find $\angle OZY$ and $\angle YOZ$.



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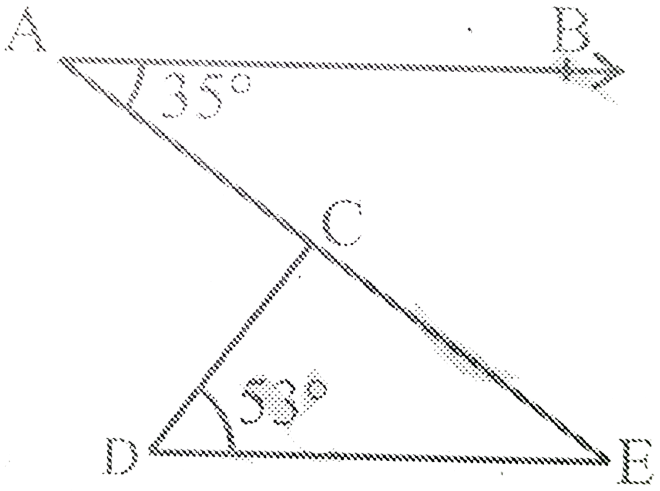
5. In Fig. 6.41, if $AB \mid\mid DE, \angle BAC = 35^\circ$ and $\angle CDE = 53^\circ$, find $\angle DCE$.



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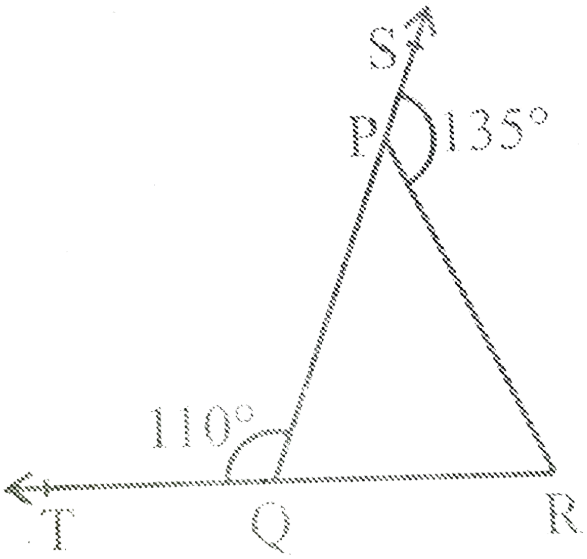
6. In Fig. 6.39, sides QP and RQ of ΔPQR are produced to point S and T respectively. If

$\angle SPR = 135^\circ$ and $\angle PQT = 110^\circ$, find $\angle PRQ$.



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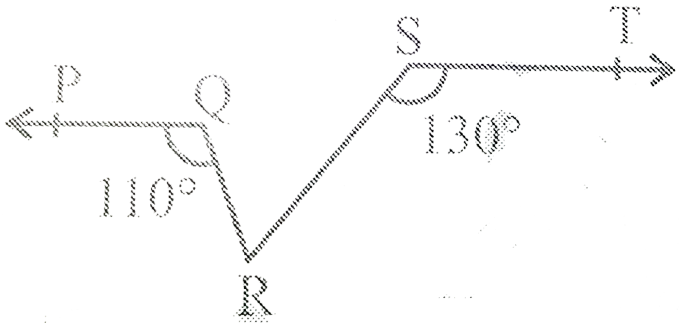
Exercise 6 2

1. In Fig. 6.31, if $PQ \| ST, \angle PQR = 110^\circ$ $and \angle RST = 130^\circ$, find $\angle QRS$.



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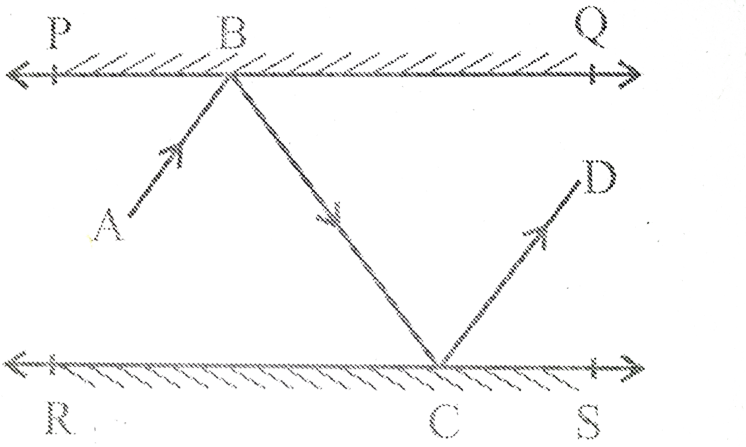
2. In Fig. 6.33, PQ and RS are two mirrors placed parallel to each other. An incident ray AB strikes the mirror PQ at B, the reflected ray moves along the path BC and strikes the mirror RS at

C and again reflects back along CD. Prove that AB || CD.



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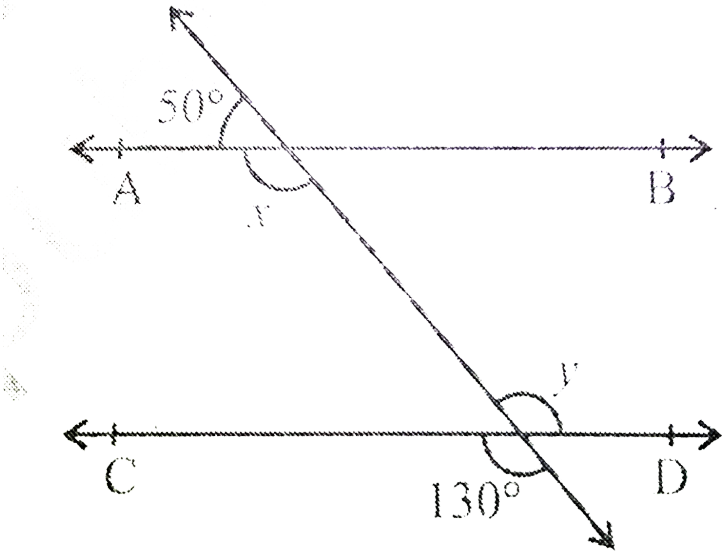
3. In Fig. 6.28, find the values of x and y and then show that AB || CD.



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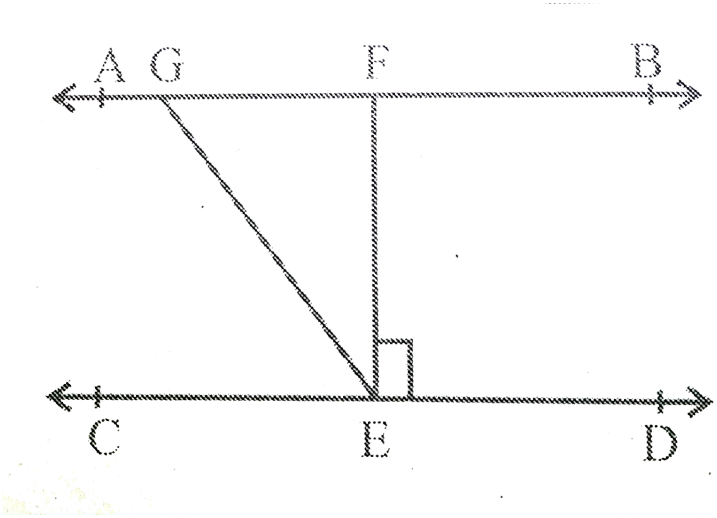
4. In Fig. 6.30, if $AB \parallel CD$, $EF \perp CD$ and $\angle GED = 126^\circ$, find $\angle AGE, \angle GEF$ and

$\angle FGE$.



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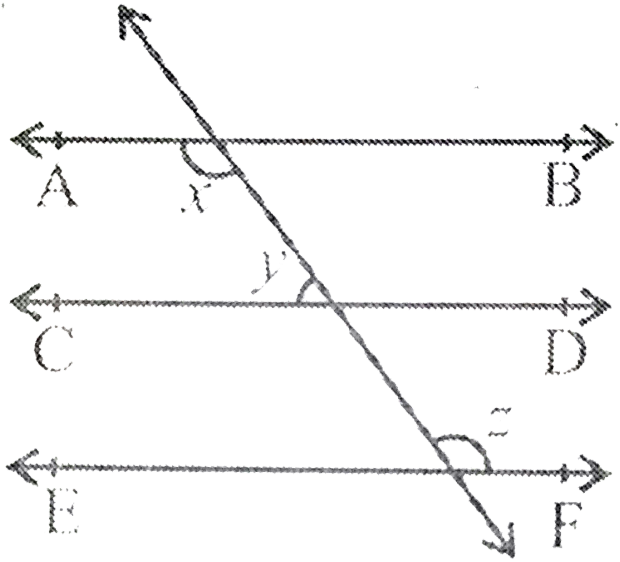
5. In Fig. if AB || CD, CD || EF and $y : z = 3 : 7$, find

x.



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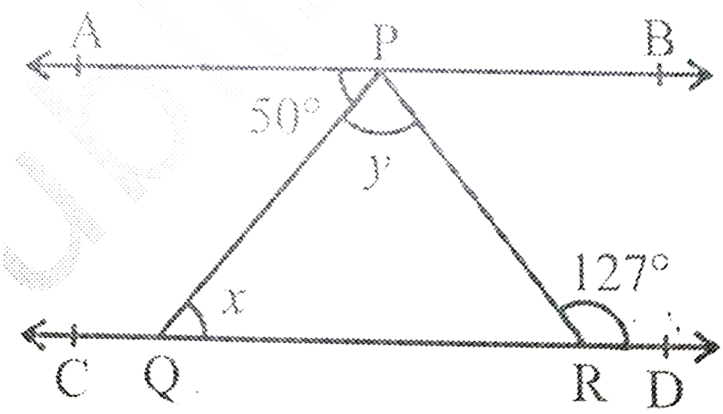
6. In Fig. 6.32, if $AB \parallel CD, \angle APQ = 50^\circ$ and $\angle PRD = 127^\circ$, find x and y.



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Solved Examples

1. In Fig. 6.37, if $QT \perp PR, \angle TQR = 40^\circ and \angle SPR = 30^\circ$, find x and y.

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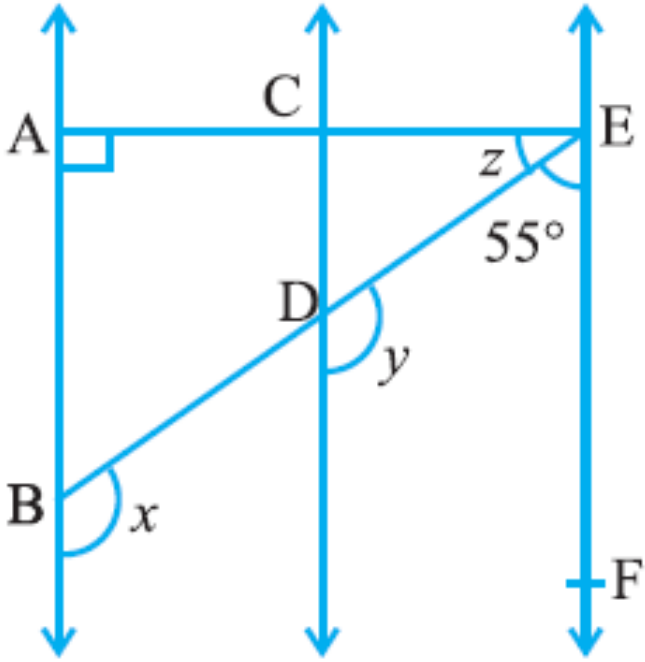
2. In Fig. 6.27, AB || CD and CD || EF. Also $EA \perp AB$. If $\angle BEF = 55o$, find the values of x, y and z.



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3. If a transversal intersects two lines such that the bisectors of a pair of corresponding angles are parallel, then prove that the two lines are parallel.

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4. In Fig. 6.24, if $PQ \| RS, \angle MXQ = 135^\circ \; and \angle MYR = 40^\circ$, find $\angle XMY$.

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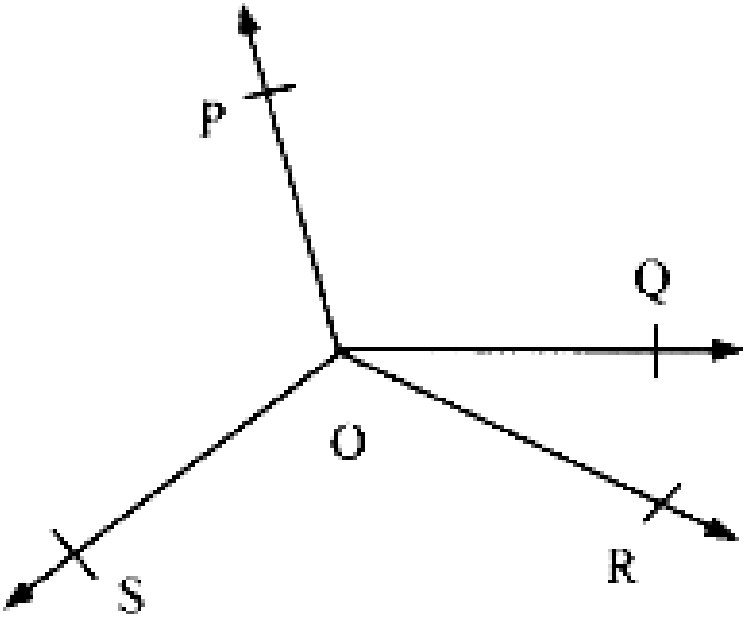
5. In Fig. 6.11, OP, OQ, OR and OS are four rays. Prove that

$$\angle POQ + \angle QOR + \angle SOR + \angle POS = 360o$$



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6. In Figure, ray OS stand on a line POQ. Ray OR and ray OT are angle bisectors of $\angle POS \, and \, \angle SOQ$ respectively. If $\angle POS = x,$ find $\angle ROT$

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7. In Fig: 6.9. lines PQ and RS intersect each other at point O. If $\angle POR : \angle ROQ = 5 : 7,$ find the all the angles.

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8. In Fig. 6.38, the sides AB and AC of ABC are produced to points E and D respectively. If bisectors BO and CO of CBE and BCD respectively meet at point O, then prove that $\angle BOC = 90^\circ - \frac{1}{2}\angle BAC.$

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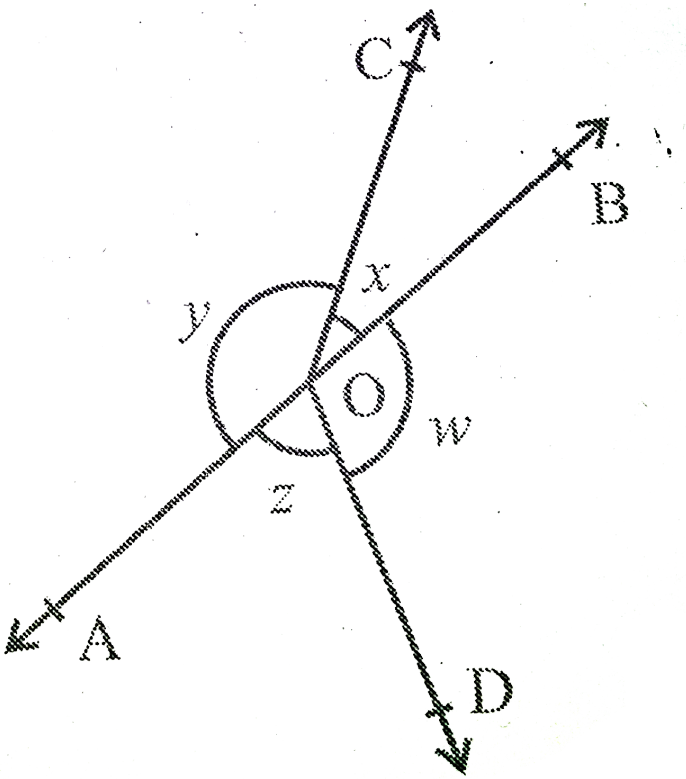
Exercise 6 1

1. In Fig. 6.16, if $x + y = w + z$, then prove that AOB is a line.



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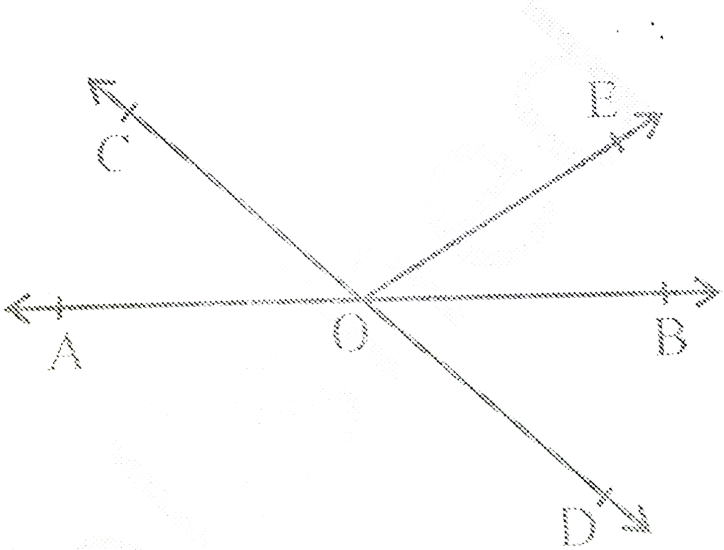
2. In Fig. 6.13, lines AB and CD intersect at O. If $\angle AOC + \angle BOE = 70^\circ$ and $\angle BOD = 40^\circ$, find $\angle BOE$ and reflex $\angle COE$.



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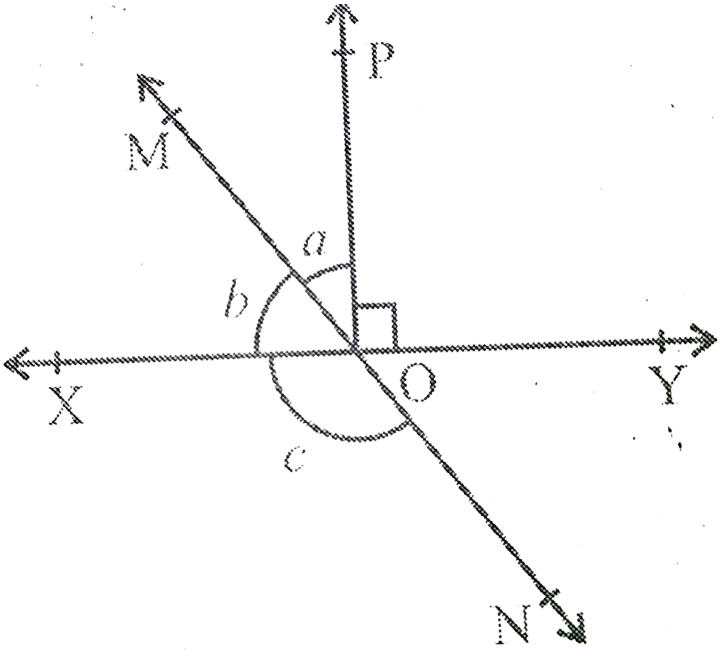
3. In fig: 6.14, lines XY and MN intersect at O. If $\angle POY = 90^\circ$ and $a : b = 2 : 3$, find c.



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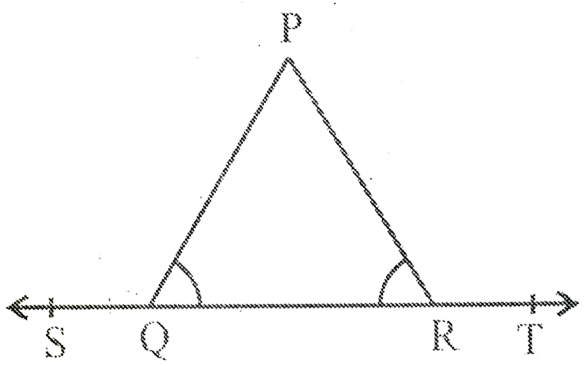
4. In Fig. 6.15, $\angle PQR = \angle PRQ$, then prove that $\angle PQS = \angle PRT$.



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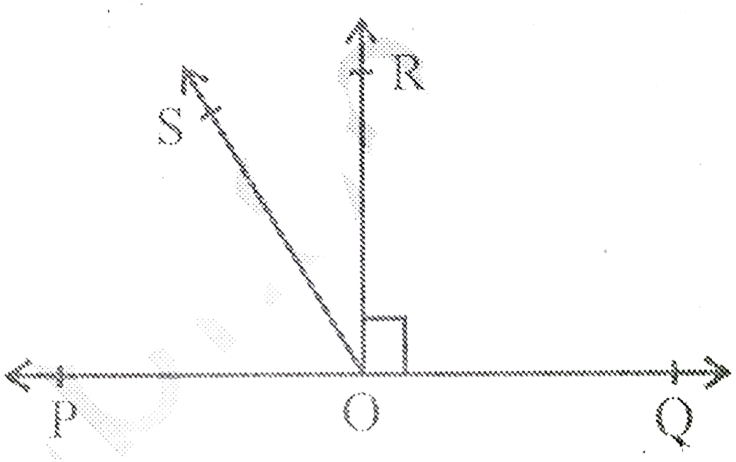
5. In Fig. 6.17, POQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. Prove that

$\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$.



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6. It is given that $\angle XYZ = 64^\circ$ and XY is produced to point P. Draw a figure from the given information. If ray YQ bisects $\angle ZYP$, find $\angle XYQ$ and reflex $\angle QYP$.

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