EXERCISE 6.1 - Question No. 1

In Fig. 6.13, lines AB and CD intersect at O. If

$\angle AOC + \angle BOE = 70o$ and $\angle BOD = 40o$, find $\angle BOE$ and

$reflex\angle COE$.

EXERCISE 6.1 - Question No. 2

In fig: 6.14, lines XY and MN intersect at O. If $\angle POY = 90$ and

$a : b = 2 : 3$, find c.

EXERCISE 6.1 - Question No. 3

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

EXERCISE 6.1 - Question No. 4

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

EXERCISE 6.1 - Question No. 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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EXERCISE 6.1 - Question No. 6

It is given that $\angle XYZ = 64o$ 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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EXERCISE 6.2 - Question No. 1

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

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EXERCISE 6.2 - Question No. 2

In Fig. 6.29, if AB || CD, CD || EF and $y : z = 3 : 7$, find x.

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EXERCISE 6.2 - Question No. 3

In Fig. 6.30, if

$AB \ | \ | \ CD,\ EF \perp CD\ and \angle GED = 126o,\ f \in d(\angle AGE, \angle GE$

.

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EXERCISE 6.2 - Question No. 4

In Fig. 6.31, if

$PQ \mid \mid ST, \angle PQR = 110^{o}\ and_{R} ST = 130^{o},\ f \in d\angle QRS$.

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EXERCISE 6.2 - Question No. 5

In Fig. 6.32, if $AB \mid \mid CD, \angle APQ = 50\ and \angle PRD = 127$, find

x and y.

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EXERCISE 6.2 - Question No. 6

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.

EXERCISE 6.3 - Question No. 1

In Fig. 6.39, sides QP and RQ of ΔPQR are produced to points S and T respectively. If $\angle SPR = 135 \ and \angle PQT = 110^{,} \ f \in d \angle PRQ.$

EXERCISE 6.3 - Question No. 2

In Fig. 6.40, $\angle X = 62o, \angle XYZ = 54o$. If YO and ZO are the bisectors of $\angle XYZ \; and \angle XZY$ respectively of $\Delta XYZ, \; f \in d\angle OZY \; and \angle YOZ$.

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EXERCISE 6.3 - Question No. 3

In Fig. 6.41, if $AB \; | \; | \; DE, \angle BAC = 35 \; and \angle CDE = 53^{\circ}, \; f \in d\angle DCE$.

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EXERCISE 6.3 - Question No. 4

In Fig. 6.42, if lines PQ and RS intersect at point T, such that

$\angle PRT = 40$' $\angle RPT = 95^a nd\angle TSQ = 75$' $f \in d/$_S Q T\` .

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EXERCISE 6.3 - Question No. 5

In Fig. 6.43, if

$PQ \perp PS, \ PQ \ | \ | \ SR, \angle SQR = 28o \ and \angle QRT = 65o$, then

find the values of x and y.

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EXERCISE 6.3 - Question No. 6

In Fig. 6.44, the side QR of 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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SOLVED EXAMPLES - Question No. 1

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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SOLVED EXAMPLES - Question No. 2

In Fig. 6.10, ray OS stands 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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SOLVED EXAMPLES - Question No. 3

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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SOLVED EXAMPLES - Question No. 4

In Fig. 6.24, if

$PQ \mid \mid RS, \angle MXQ = 135\ and \angle MYR = 40^{,}\ f \in d\angle XMY$.

SOLVED EXAMPLES - Question No. 5

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.

SOLVED EXAMPLES - Question No. 6

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.

SOLVED EXAMPLES - Question No. 7

In Fig. 6.37, if $QT \perp PR, \angle TQR = 40^{a}nd\angle SPR = 30$, find x and y.

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SOLVED EXAMPLES - Question No. 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 $\angle BOC = 90o - \frac{1}{2}\angle BAC$.

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