पुUना International School
Shree Swaminarayan Gurukul, Zundal

Grade – 9
MATHS
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INDEX

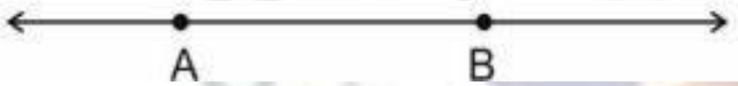
SUBJECT: MATHS **STANDARD – 9^{TH}**

CHAPTER – 06

1. **Basic Terms and Definitions**
2. **Intersecting Lines and Non-intersecting Lines**
3. **Pairs of Angles**
4. **Parallel Lines and a Transversal**
5. **Lines Parallel to the same Line**
6. **Angle Sum Property of a Triangle**

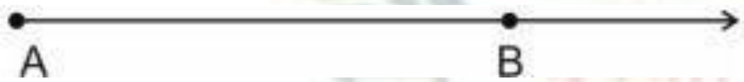
Point - We often represent a point by a fine dot made with a fine sharpened pencil on a piece of paper.

Line - A line is completely known if we are given any two distinct points. Line AB is represented by as $\overleftrightarrow{AB}$. A line or a straight line extends indefinitely in both the directions.



Line segment - A part (or portion) of a line with two end points is called a line segment.

Ray - A part of line with one end point is called a ray.It usually denotes the direction of line



Collinear points - If three or more points lie on the same line, they are called collinear points, otherwise they are called non-collinear points.

Angle - An angle is the union of two non-collinear rays with a common initial point.

Types of Angles -

Acute angle - An acute angle measure between 0^o and 90^o

Right angle - A right angle is exactly equal to 90^o

Obtuse angle - An angle greater than 90^o but less than 180^o

Straight angle - A straight angle is equal to 180^o

Reflex angle - An angle which is greater than 180^o but less than 360^o is called a reflex angle.

Complementary angles - Two angles whose sum is 90^o are called complementary angles. Let one angle be x, then its complementary angle be $(90^\circ - x)$.

Supplementary angle - Two angles whose sum is 180^o are called supplementary angles. Let one angle be x, then its supplementary angle be $(180^\circ - x)$.

Adjacent angles -Two **angles** are **Adjacent** when they have a common side and a common vertex (corner point) and don't overlap..

Linear pair - A **linear pair** of angles is formed when two lines intersect. Two angles are said to be **linear** if they are adjacent angles formed by two intersecting lines. The measure of a straight angle is 180 degrees, so a **linear pair** of angles must add up to 180 degrees

Vertically opposite angles - Vertically opposite angles are formed when two lines intersect each other at a point. Vertically opposite angles are always equal.

TRANSVERSAL - A line which intersects two or more given lines at distinct points, is called a transversal of the given line.

(i) Corresponding angles

(ii) Alternate interior angles

Alternate exterior angles

(iii) Interior angles on the same side of the transversal.

- **If a transversal intersects two parallel lines, then**

(i) Each pair of corresponding angles is equal.

(ii) Each pair of alternate interior angles is equal.

(iii) Each pair of interior angle on the same side of the transversal is supplementary.

- If a transversal interacts two lines such that, either

(iv) any one pair of corresponding angles is equal, or

(v) any one pair of alternate interior angles is equal or

(vi) Any one pair of interior angles on the same side of the transversal is supplementary, then the lines are parallel.

- Lines which are parallel to a given line are parallel to each other.
- The sum of the three angles of a triangle is 180
- The sum of all angles round a point is equal to 360°.
- If a side of a triangle is produced, the exterior angle so formed is equal to the sum of the two interior opposite angles.
- If two parallel lines are intersected by a transversal, the bisectors of any pair of alternate interior angles are parallel and vice-versa.
- If two parallel lines are intersected by a transversal, then bisectors of any two corresponding angles are parallel and vice-versa.
- If a line is perpendicular to one of the given parallel lines, then it is also perpendicular to the other line.

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

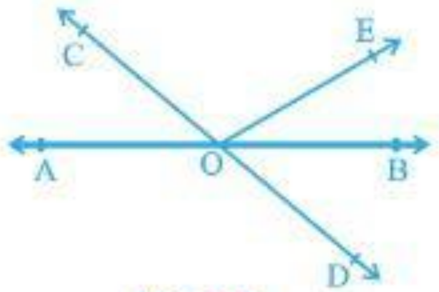


Fig. 6.13

Ans. We are given that $\angle AOC + \angle BOE = 70°$ and $\angle BOD = 40°$.

We need to find $\angle BOE$ and reflex $\angle COE$.

From the given figure, we can conclude that $\angle AOC$, $\angle COE$ and $\angle BOE$ form a linear pair.

We know that sum of the angles of a linear pair is $180°$.

$$\angle AOC + \angle COE + \angle BOE = 180°$$
$$\therefore \angle AOC + \angle BOE + \angle COE = 180°$$
$$\Rightarrow 70° + \angle COE = 180°$$
$$\Rightarrow \angle COE = 180° - 70°$$
$$= 110°.$$

Reflex $\angle COE = 360° - \angle COE$

$$= 360° - 110°$$
$$= 250°.$$

$\angle AOC = \angle BOD$ (Vertically opposite angles), or

$$\angle BOD + \angle BOE = 70°.$$

But, we are given that $\angle BOD = 40^\circ$.

$40^\circ + \angle BOE = 70^\circ$

$\angle BOE = 70^\circ - 40^\circ$

$= 30^\circ$.

Therefore, we can conclude that $\text{Reflex } \angle COE = 250^\circ$ and $\angle BOE = 30^\circ$.

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

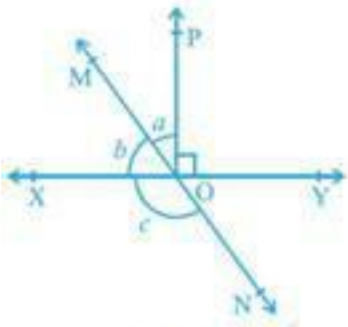


Fig. 6.14

Ans. We are given that $\angle POY = 90^\circ$ and $a : b = 2 : 3$.

We need find the value of *c* in the given figure.

Let *a* be equal to 2*x* and *b* be equal to *3x*.

$\because\ a + b = 90^\circ \Rightarrow 2x + 3x = 90^\circ \Rightarrow 5x = 90^\circ$

$\Rightarrow x = 18^\circ$

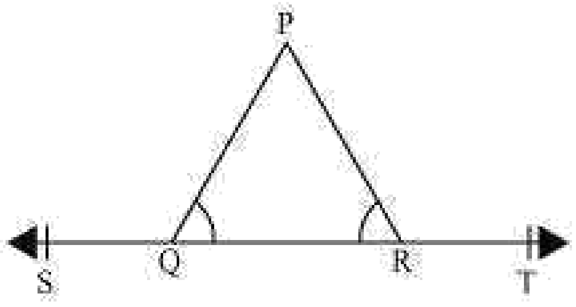
Therefore $b = 3 \times 18^\circ = 54^\circ$

Now $b + c = 180^\circ$ [Linear pair]

$\Rightarrow 54^\circ + c = 180^\circ$

$\Rightarrow c = 180^\circ - 54^\circ = 126^\circ$

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



Ans. We need to prove that $\angle PQS = \angle PRT$.

We are given that $\angle PQR = \angle PRQ$.

From the given figure, we can conclude that $\angle PQS$ and $\angle PQR$, and $\angle PRS$ and $\angle PRT$ form a linear pair.

We know that sum of the angles of a linear pair is 180°.

$\therefore \angle PQS + \angle PQR = 180^\circ$, and (i)

$\angle PRQ + \angle PRT = 180^\circ$. (ii)

From equations (i) and (ii), we can conclude that

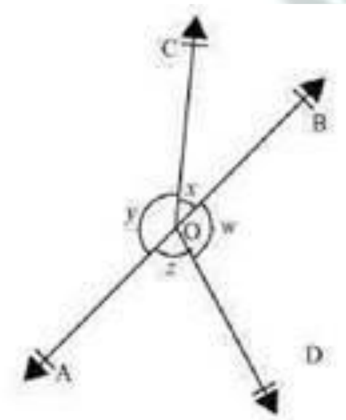
$\angle PQS + \angle PQR = \angle PRQ + \angle PRT$.

But, $\angle PQR = \angle PRQ$.

$\therefore \angle PQS = \angle PRT$.

Therefore, the desired result is proved.

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



Ans. We need to prove that *AOB* is a line.

We are given that $x + y = w + z$.

We know that the sum of all the angles around a fixed point is 360°.

Thus, we can conclude that $\angle AOC + \angle BOC + \angle AOD + \angle BOD = 360^\circ$, or

$y + x + z + w = 360^\circ$.

But, $x + y = w + z$ (Given).

$2(y + x) = 360^\circ$.

$y + x = 180^\circ$.

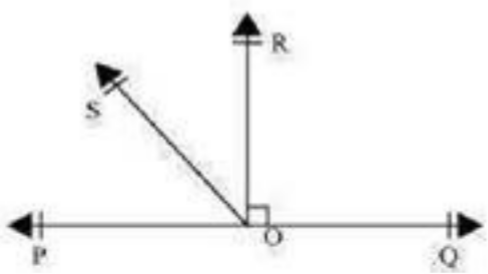
From the given figure, we can conclude that *y* and *x* form a linear pair.

We know that if a ray stands on a straight line, then the sum of the angles of linear pair formed by the ray with respect to the line is 180°.

.

Therefore, we can conclude that *AOB* is a line.

4. In the given figure, POQ is a line. Ray OR is perpendicular to line PQ. OS is another ray lying between rays OP and OR. Prove that $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$.



Ans. We need to prove that $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$.

We are given that *OR* is perpendicular to *PQ*, or

$\angle QOR = 90^\circ$.

From the given figure, we can conclude that $\angle POR$ and $\angle QOR$ form a linear pair.

We know that sum of the angles of a linear pair is 180°.

, or

$\angle POR = 90^\circ$.

From the figure, we can conclude that $\angle POR = \angle POS + \angle ROS$.

$\Rightarrow \angle POS + \angle ROS = 90^\circ$, or

$\angle ROS = 90^\circ - \angle POS$.(*i*)

From the given figure, we can conclude that $\angle QOS$ and $\angle POS$ form a linear pair.

We know that sum of the angles of a linear pair is 180°.

$\angle QOS + \angle POS = 180^\circ$, or

$\frac{1}{2}(\angle QOS + \angle POS) = 90^\circ$.(*ii*)

Substitute (*ii*) in (*i*), to get

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

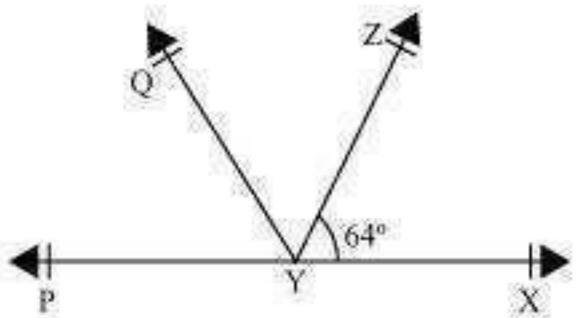
$= \frac{1}{2}(\angle QOS - \angle POS)$.

Therefore, the desired result is proved.

(i) 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 $\angle QYP$

Ans. We are given that $\angle XYZ = 64^\circ$, *XY* is produced to *P* and *YQ* bisects $\angle ZYP$.

We can conclude the given below figure for the given situation:



We need to find $\angle XYQ$ and reflex $\angle QYP$.

From the given figure, we can conclude that $\angle XYZ$ and $\angle ZYP$ form a linear pair.

We know that sum of the angles of a linear pair is 180°.

.

But .

$\Rightarrow 64^\circ + \angle ZYP = 180^\circ$

$\Rightarrow \angle ZYP = 116^\circ.$

Ray *YQ* bisects $\angle ZYP$, or

$\angle QYZ = \angle QYP = \frac{116^\circ}{2} = 58^\circ.$

$\angle XYQ = \angle QYZ + \angle XYZ$

$= 58^\circ + 64^\circ = 122^\circ.$

Reflex $\angle QYP = 360^\circ - \angle QYP$

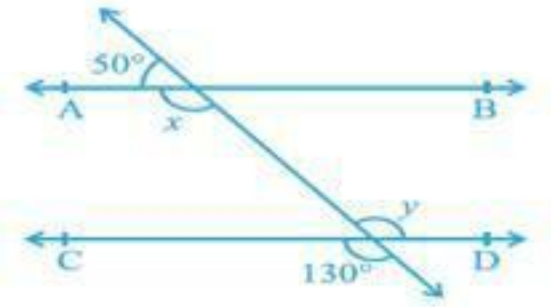
$= 360^\circ - 58^\circ$

$= 302^\circ.$

Therefore, we can conclude that $\angle XYQ = 122^\circ$ and Reflex $\angle QYP = 302^\circ$

Chapter - 6
Lines and Angles (Ex. 6.2)

1. In the given figure, find the values of x and y and then show that AB || CD.



Ans. We need to find the value of *x* and *y* in the figure given below and then prove that $AB \parallel CD$.

From the figure, we can conclude that

$y = 130^\circ$ (Vertically opposite angles), and

x and 50° form a pair of linear pair.

We know that the sum of linear pair of angles is 180°.

$x + 50^\circ = 180^\circ$

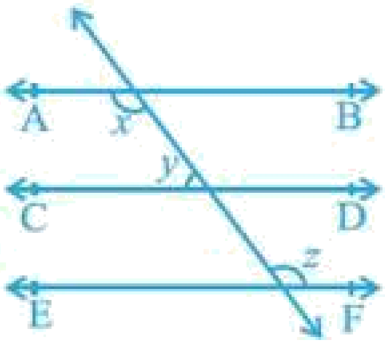
$x = 130^\circ$.

$x = y = 130^\circ$.

From the figure, we can conclude that x and y form a pair of alternate interior angles corresponding to the lines *AB* and *CD*.

Therefore, we can conclude that $x = 130^\circ, y = 130^\circ$ and $AB \parallel CD$.

2. In the given figure, if AB || CD, CD || EF and y : z = 3: 7, find x.



Ans. We are given that $AB \parallel CD$, $CD \parallel EF$ and $y : z = 3 : 7$.

We need to find the value of *x* in the figure given below.

We know that lines parallel to the same line are also parallel to each other.

We can conclude that $AB \parallel CD \parallel EF$.

Let Angles be $y = 3a$ and $z = 7a$.

We know that angles on same side of a transversal are supplementary.

.

$x = z$ (Alternate interior angles)

$z + y = 180^\circ$, or

$7a + 3a = 180^\circ$

$\Rightarrow 10a = 180^\circ$

$a = 18^\circ$.

$z = 7a = 126^\circ$

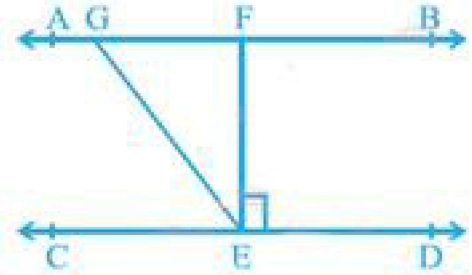
$y = 3a = 54^\circ$.

Now $x + 54^\circ = 180^\circ$

$x = 126^\circ$.

Therefore, we can conclude that $x = 126^\circ$.

3. In the given figure, If AB || CD, $EF \perp CD$ and $\angle GED = 126^\circ$, find $\angle AGE, \angle GEF$ and $\angle FGE$.



Ans. We are given that $AB \parallel CD$, $EF \perp CD$ and $\angle GED = 126^\circ$.

We need to find the value of $\angle AGE, \angle GEF$ and $\angle FGE$ in the figure given below.

$\angle GED = 126^\circ$

$\angle GED = \angle FED + \angle GEF$.

But, $\angle FED = 90^\circ$.

$126^\circ = 90^\circ + \angle GEF$

$\Rightarrow \angle GEF = 36^\circ$.

$\because \angle AGE = \angle GED$ (Alternate angles)

$\therefore \angle AGE = 126^\circ$.

From the given figure, we can conclude that $\angle FED$ and $\angle FEC$ form a linear pair.

We know that sum of the angles of a linear pair is 180°.

$\angle FED + \angle FEC = 180^\circ$

$\Rightarrow 90^\circ + \angle FEC = 180^\circ$

$\Rightarrow \angle FEC = 90^\circ$

$\angle FEC = \angle GEF + \angle GEC$

$\therefore 90^\circ = 36^\circ + \angle GEC$

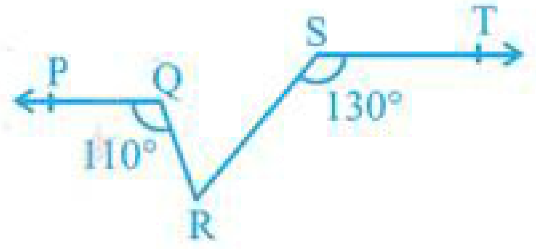
$\Rightarrow \angle GEC = 54^\circ$.

$\angle GEC = \angle FGE = 54^\circ$ (Alternate interior angles)

Therefore, we can conclude that $\angle AGE = 126^\circ, \angle GEF = 36^\circ$ and $\angle FGE = 54^\circ$.

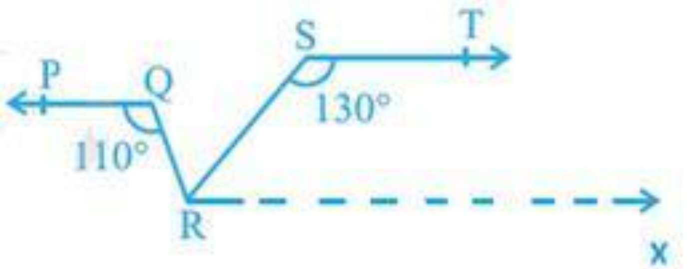
4. **In the given figure, if PQ || ST, $\angle PQR = 110^\circ$ and $\angle RST = 130^\circ$, find $\angle QRS$.**

[Hint: Draw a line parallel to ST through point R.]



Ans. We are given that $PQ \parallel ST$, $\angle PQR = 110^\circ$ and $\angle RST = 130^\circ$.

We need to find the value of $\angle QRS$ in the figure.



We need to draw a line *RX* that is parallel to the line *ST*, to get

Thus, we have $ST \parallel RX$.

We know that lines parallel to the same line are also parallel to each other.

We can conclude that $PQ \parallel ST \parallel RX$.

(Alternate interior angles)

S0 $\angle QRX = 110^\circ$.

We know that angles on same side of a transversal are supplementary.

$\angle RST + \angle SRX = 180^\circ \Rightarrow 130^\circ + \angle SRX = 180^\circ$

$\Rightarrow \angle SRX = 180^\circ - 130^\circ = 50^\circ$.

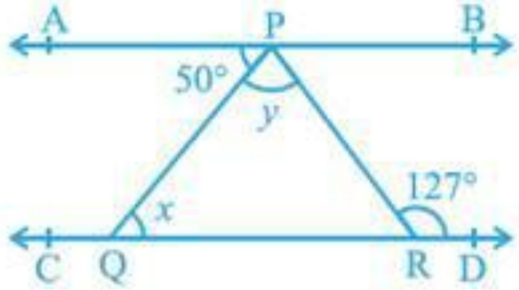
From the figure, we can conclude that

$\angle QRX = \angle SRX + \angle QRS \Rightarrow 110^\circ = 50^\circ + \angle QRS$

$\Rightarrow \angle QRS = 60^\circ$.

Therefore, we can conclude that $\angle QRS = 60^\circ$.

5. In the given figure, if AB || CD, $\angle APQ = 50^\circ$ and $\angle PRD = 127^\circ$, find x and y.



Ans. We are given that $AB \parallel CD$, $\angle APQ = 50^\circ$ and $\angle PRD = 127^\circ$.

We need to find the value of *x* and *y* in the figure.

$\angle APQ = x = 50^\circ$. (Alternate interior angles)

(Alternate interior angles)

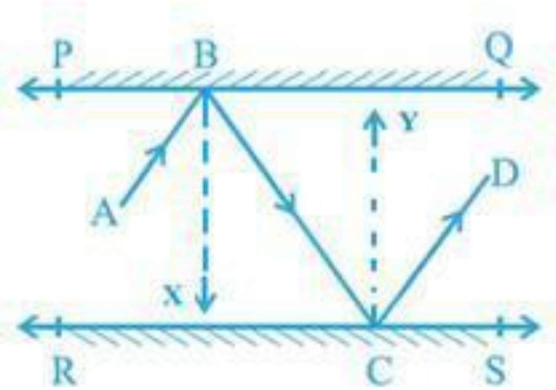
$\angle APR = \angle QPR + \angle APQ$.

$127^\circ = y + 50^\circ \quad \Rightarrow y = 77^\circ$.

Therefore, we can conclude that $x = 50^\circ$ and $y = 77^\circ$.

(ii) In the given figure, 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.

Ans. We are given that *PQ* and *RS* are two mirrors that are parallel to each other.



We need to prove that $AB \parallel CD$ in the figure.

Let us draw lines *BX* and *CY* that are parallel to each other, to get $AB \parallel CD$ We know that according to the laws of reflection

$\angle ABX = \angle CBX$ and $\angle BCY = \angle DCY$.

$\angle BCY = \angle CBX$ (Alternate interior angles)

We can conclude that $\angle ABX = \angle CBX = \angle BCY = \angle DCY$.

From the figure, we can conclude that

and

Therefore, we can conclude that $\angle ABC = \angle DCB$.

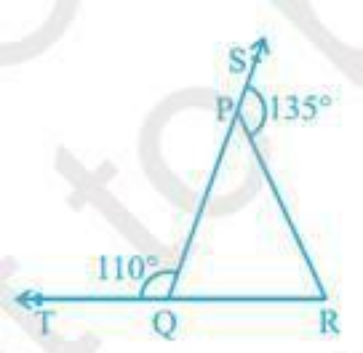
From the figure, we can conclude that $\angle ABC$ and $\angle DCB$ form a pair of alternate interior angles corresponding to the lines *AB* and *CD*, and transversal *BC*.

Therefore, we can conclude that $AB \parallel CD$.

CHAPTER 6

Lines and Angles
(Ex. 6.3)

1. **In the given figure, sides QP and RQ of ΔPQR are produced to points S and T respectively. If $\angle$ SPR = 135º and $\angle$ PQT = 110º, find $\angle$ PRQ.**



Ans. We are given that $\angle SPR = 135^\circ$ and $\angle PQT = 110^\circ$.

We know that the sum of angles of a linear pair is 180°.

$\angle SPR + \angle RPQ = 180^\circ$. (Linear Pair axiom)

and $\angle PQT + \angle PQR = 180^\circ$. (Linear Pair axiom)

$135^\circ + \angle RPQ = 180^\circ$, and $110^\circ + \angle PQR = 180^\circ$,

Or, $\angle RPQ = 45^\circ$, and $\angle PQR = 70^\circ$.

From the figure, we can conclude that

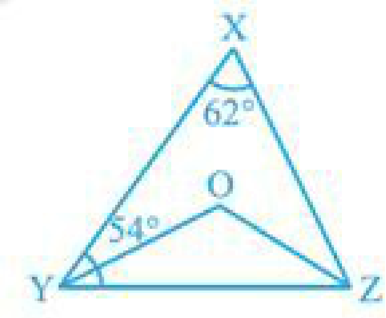
$\angle PQR + \angle RPQ + \angle PRQ = 180^\circ$. (Angle sum property)

$\Rightarrow 70^\circ + 45^\circ + \angle PRQ = 180^\circ \Rightarrow 115^\circ + \angle PRQ = 180^\circ$

$\Rightarrow \angle PRQ = 65^\circ$.

Therefore, we can conclude that $\angle PRQ = 65^\circ$.

2. **In the given figure, $\angle$ X = 62º, $\angle$ XYZ = 54º. If YO and ZO are the bisectors of $\angle$ XYZ and $\angle$ XZY respectively of ΔXYZ, find $\angle$ OZY and $\angle$ YOZ.**



Ans. We are given that $\angle X = 62^\circ$, $\angle XYZ = 54^\circ$ and *YO* and *ZO* are bisectors of $\angle XYZ$ and $\angle XZY$, respectively.

We need to find $\angle OZY$ and $\angle YOZ$ in the figure.

From the figure, we can conclude that in ΔXYZ

$\angle X + \angle XYZ + \angle XZY = 180^\circ$. (Angle sum property)

$\Rightarrow 62^\circ + 54^\circ + \angle XZY = 180^\circ \Rightarrow 116^\circ + \angle XZY = 180^\circ$

$\Rightarrow \angle XZY = 64^\circ$.

We are given that *OY* and *OZ* are the bisectors of $\angle XYZ$ and $\angle XZY$, respectively. $\angle XYO = \angle ZYO = \frac{54}{2} = 27^\circ$ and $\angle OZY = \angle XZO = \frac{64}{2} = 32^\circ$

From the figure, we can conclude that in ΔOYZ

$\angle OYZ + \angle OZY + \angle YOZ = 180^\circ$ (Angle sum property)

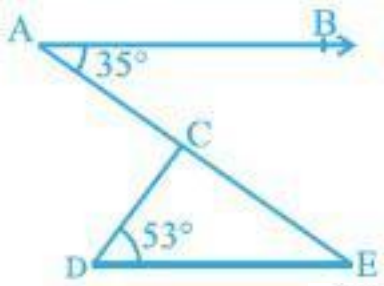
$27^\circ + 32^\circ + \angle YOZ = 180^\circ$

$\Rightarrow 59^\circ + \angle YOZ = 180^\circ$

$\Rightarrow \angle YOZ = 121^\circ$.

Therefore, we can conclude that $\angle YOZ = 121^\circ$ and $\angle OZY = 32^\circ$.

3. In the given figure, if AB || DE, $\angle$ BAC = 35º and $\angle$ CDE = 53º, find $\angle$ DCE.



Ans. We are given that $AB \parallel DE$, $\angle BAC = 35^\circ$ and $\angle CDE = 53^\circ$.

We need to find the value of $\angle DCE$ in the figure given below.

From the figure, we can conclude that

$\angle BAC = \angle CED = 35^\circ$ (Alternate interior)

From the figure, we can conclude that in ΔDCE

$\angle DCE + \angle CED + \angle CDE = 180^\circ$ (Angle sum property)

$\angle DCE + 35^\circ + 53^\circ = 180$

$\Rightarrow \angle DCE + 88^\circ = 180^\circ$

$\Rightarrow \angle DCE = 92^\circ$.

Therefore, we can conclude that $\angle DCE = 92^\circ$.

4. **In the given figure, if lines PQ and RS intersect at point T, such that $\angle$ PRT = 40º, $\angle$ RPT = 95º and $\angle$ TSQ = 75º, find $\angle$ SQT.**

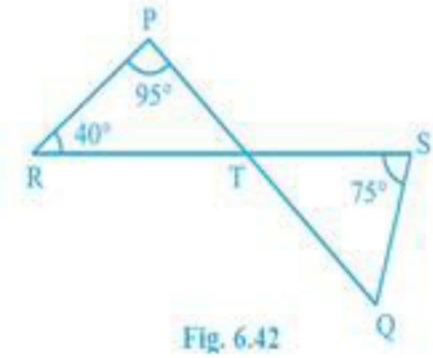


Fig. 6.42

Ans. We are given that $\angle PRT = 40^\circ$, $\angle RPT = 95^\circ$ and $\angle TSQ = 75^\circ$.

We need to find the value of $\angle SQT$ in the figure.

From the figure, we can conclude that in ΔRTP

$\angle PRT + \angle RTP + \angle RPT = 180^\circ$ (Angle sum property)

$40^\circ + \angle RTP + 95^\circ = 180^\circ$

$\Rightarrow \angle RTP + 135^\circ = 180^\circ$

$\Rightarrow \angle RTP = 45^\circ$.

From the figure, we can conclude that

$\angle RTP = \angle STQ = 45^\circ$ (Vertically opposite angles)

From the figure, we can conclude that in ΔSTQ

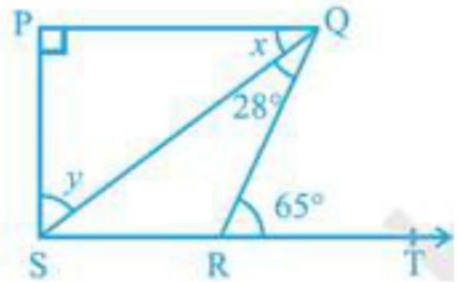
$\angle SQT + \angle STQ + \angle TSQ = 180^\circ$ (Angle sum property)

$\angle SQT + 45^\circ + 75^\circ = 180^\circ \Rightarrow \angle SQT + 120^\circ = 180^\circ$

$\Rightarrow \angle SQT = 60^\circ$.

Therefore, we can conclude that $\angle SQT = 60^\circ$.

(ii) In the given figure, if $PQ \perp PS$, PQ || SR, $\angle SQR = 28^\circ$ and $\angle QRT = 65^\circ$, then find the values of x and y.



Ans. We are given that $PQ \perp PS, PQ \parallel SR, \angle SQR = 28^\circ$ and $\angle QRT = 65^\circ$.

We need to find the values of *x* and *y* in the figure.

We know that "If a side of a triangle is produced, then the exterior angle so formed is equal to the sum of the two interior opposite angles."

From the figure, we can conclude that

$\angle SQR + \angle QSR = \angle QRT$, or

$28^\circ + \angle QSR = 65^\circ$

$\Rightarrow \angle QSR = 37^\circ$

From the figure, we can conclude that

$x = \angle QSR = 37^\circ$ (Alternate interior angles) From

the figure, we can conclude that ΔPQS

$\angle PQS + \angle QSP + \angle QPS = 180^\circ$ (Angle sum property)

$\angle QPS = 90^\circ \quad (PQ \perp PS)$

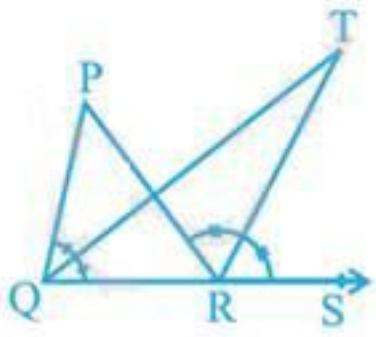
$x + y + 90^\circ = 180^\circ$

$\Rightarrow y + 37^\circ + 90^\circ = 180^\circ$

$\Rightarrow y + 127^\circ = 180^\circ \Rightarrow y = 53^\circ$

Therefore, we can conclude that $x = 37^\circ$, $y = 53^\circ$

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



Ans. We need to prove that $\angle QTR = \frac{1}{2}\angle QPR$ in the figure given below.

We know that "If a side of a triangle is produced, then the exterior angle so formed is equal to the sum of the two interior opposite angles."

From the figure, we can conclude that in ΔQTR, $\angle TRS$ is an exterior angle

$\angle QTR + \angle TQR = \angle TRS$, or

$\angle QTR = \angle TRS - \angle TQR$ …(i)

From the figure, we can conclude that in ΔPQR, $\angle PRS$ is an exterior angle

$\angle QPR + \angle PQR = \angle PRS$.

We are given that QT and RT are angle bisectors of $\angle PQR$ and $\angle PRS$.

$\angle QPR + 2\angle TQR = 2\angle TRS$

$\angle QPR = 2(\angle TRS - \angle TQR)$.

We need to substitute equation (*i*) in the above equation, to get

$\angle QPR = 2\angle QTR$, or

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

Therefore, we can conclude that the desired result is proved.

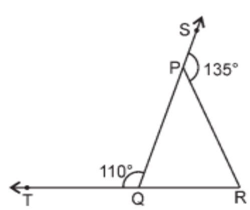
WORK - SHEET

CHAPTER – 6 **STD -9th**

LINES AND ANGLE

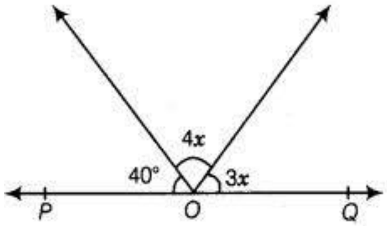
*SOLVE

1. If angle is such that six times its compliment is 12° less than twice its supplement, then the value of angle is
   a. 38° b. 48° c. 58° d. 68°
2. If angles measures X and Y form a complimentary pair , then which of the following measures of angle will form a supplementary pair?
   a. (x + 47°), (y + 43°)
   b. (x - 23°), (y + 23°)
   c. (x - 47°), (y - 43°)
   d. No such pair is possible.
3. 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
4. An exterior angle of a triangle is 105° and its two interior opposite angles are equal. Each of these equal angles is.
   a. 37 ½° b. 52½° c.72½° d.75°
5. Sides QP and RQ of triangle PQR are produced to point S and T respectively if angle SPR= 135° and angle PQT =110 ° find angle PRQ



   a. 35°
   b. 45°
   c. 55°
   d. 65°

6. In the figure, POQ is a line. The value of x is.



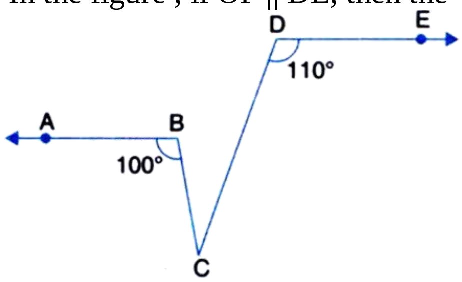
a. 20°

b. 25°

c. 30°

d. 35°

7. In the figure , if OP || DE, then the value of ∠BCD is



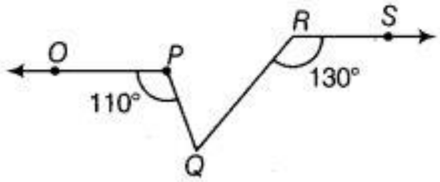
a. 30°

b. 45°

c. 55°

d. 65°

8. In the figure if OP||RS, ∠OPQ = 110° and ∠QRS = 130°, then ∠PQR is equal to.



a. 40° b. 50° c.60° d.70°

9. If one of a triangle is equal to the sum of the other two, then triangle is a / an

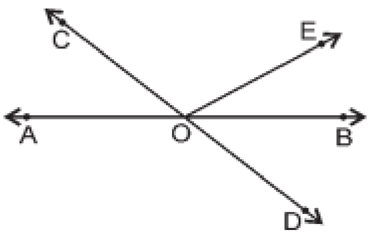
a. Acute angle triangle

b. Obtuse angle triangle

c. Right angle triangle

d. None of these

10. In the given figure, lines AB and CD intersect at O. If ∠AOC + ∠BOE = 80° and ∠BOD = 30°, then ∠BOE equals to

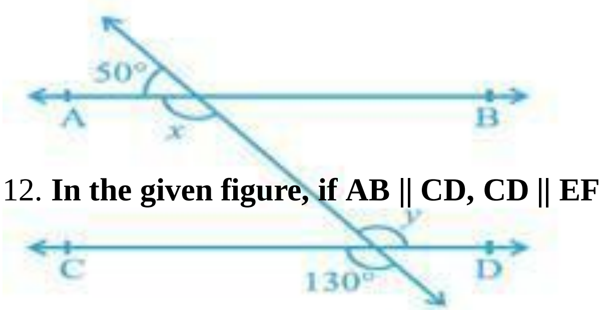


a. 30° b.40° c.50° d.60°

b.

<u>*SOLVE</u>

11. In the given figure, find the values of x and y and then show that AB || CD.



12. **In the given figure, if AB || CD, CD || EF and y : z = 3: 7, find x.**

13.As per given figure, AB∥DC and AD∥BC. Prove that ∠DAB = ∠DCB.