Unit 11

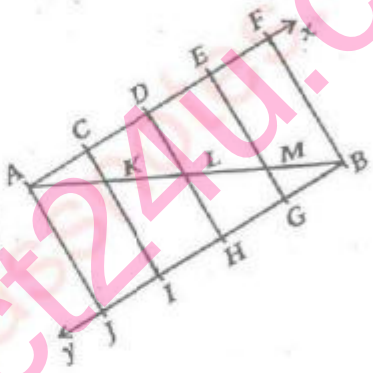
PRACTICAL GEOMETRY

EXERCISE NO. 11.1

1. *Divide a line segment of lenght 6cm into four equal parts.*

Solution:

Steps of construction:



(i) Draw $\overline{AB}$ of length 6cm

(ii) Draw $\overline{AX}$ making any suitable acute angle 40^o with $\overline{AB}$, with protractor.

(iii) At point B, draw $\overline{BY}$ making same acute angle such that $m\angle BAX = m\angle ABY = 40^o$.

(iv) Using pair of compasses, draw four acrs of suitable measure to cut $\overline{AX}$ at points C, D, E and F such that all the small pieces of lengths are equal in measure.

(v) Similarly using pair of compasses draw four arcs of same measure to cut $\overline{BY}$ at point $G.H.I$ and J such that small pieces of length are equal in measure.

6. Join points A to J, C to I, D to H, E to G and F to B in order to draw $\overline{AJ}$, $\overline{CI}$, $\overline{DH}$, $\overline{EG}$ and $\overline{FB}$. These line segments cut $\overline{AB}$ at point. A,K,L.

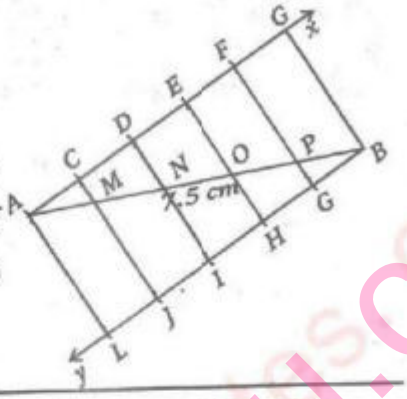
7. In this way given $\overline{AB}$ is divided in the required four equal parts such that $m\overline{AK} = m\overline{KL} = m\angle m = m\overline{MB}$.

2. Divide $mAB = 7.5cm$ in fine equal parts.

Solution:

Steps of Construction:

(i) Draw $m\overline{AB} = 7.5cm$ (write all steps of construction point 2 to point 7 as Q.1)

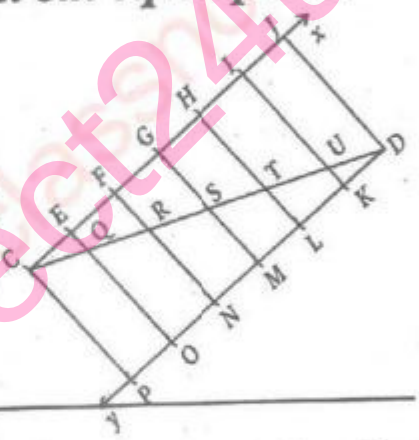


3. Divide $mCD = 9$ in six equal parts.

Solution:

Steps of Construction:

(i) Draw $m\overline{CD} = 9cm$ (write all steps of constructions point 2 to point 7 as Q1.)



4. Divide a line segment 5cm in the ratio of 2:3.

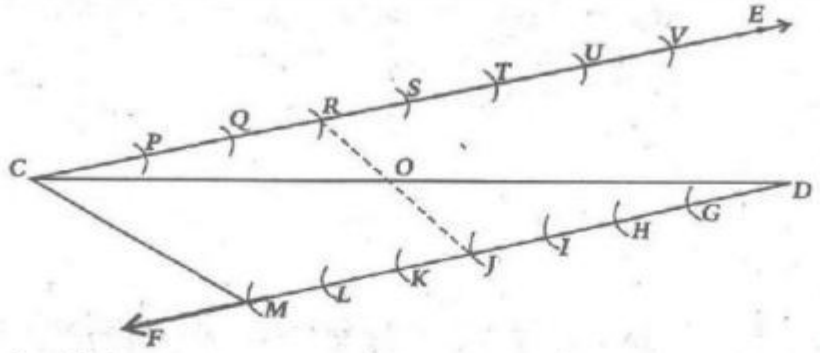
Solution:

Steps of Construction:

(i) Draw $\overline{CD}$ of length $5cm$.

(ii) At point C, draw $\overline{CE}$ making an acute angle DCE say 40° with protractor.

(iii) At point D, on the opposite side of $\overline{CD}$, draw $\overline{DF}$ making same acute angle CDF with protractor



(iv) Using compasses draw seven (2 + 3 = the sum of ratios) arcs of suitable measure to cut $\overline{CE}$ at points *P, Q, R, S, T, U.*

(v) Similarly using compasses of same measure, draw seven (3 + 4 = sum of ratios) arc to cut $\overline{DF}$ at points *G, H, I, J, K, L,* and *M.*

(vi) From point *C* mark *3rd.* point *R.*

(vii) From point *D* mark *4th.* point *J.*

(viii) Now join points *R* and *J* and draw $\overline{RJ}$ to cut $\overline{CD}$ at point *O.*

(ix) In this way $\overline{CO} : \overline{OD} = 2:3$.

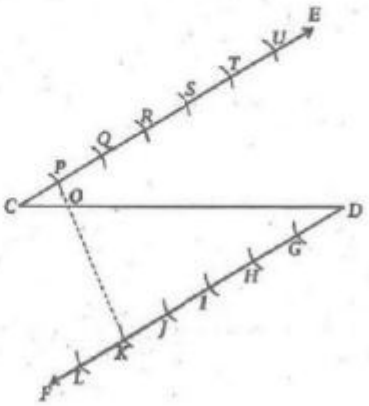
It means the given $\overline{CD}$ of measure *7cm* is divided in the required ratio of 2:3 at point *O* or $m\overline{CO} : m\overline{OD} = 2:3$.

5. *Divide a line segment measuring 8.4cm in the of 1:5.*

Solution:

Steps of construction:

(i) Draw $\overline{CD}$ of length *8.4cm* (write all steps of construction point 2 to part II as Q4)



6. Divide $mMN = 8cm$ in the ratio of 3:5.

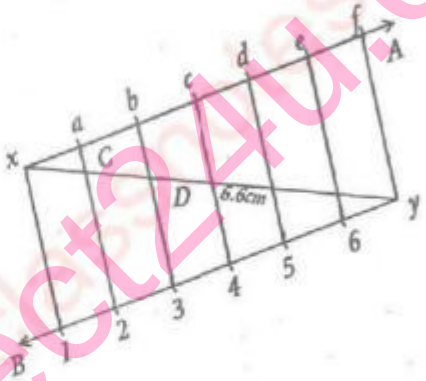
Solution:

for solution see page no. 194 example No. 1 of textbook.

7. Divide a line segment measuring 6.6cm in the ratio of 1:2:3.

Solution:

Steps of Construction:



(i) Draw $\overline{XY}$ of measure 6.6cm

(ii) At point X, draw $\overline{XA}$ making suitable acute angle YXA (40^o) with protractor.

(iii) At point Y draw $\overline{YB}$ making same acute angle XYB, such the $m\angle YXA = m\angle XYB = 40^o$.

(iv) Using passes draw six ($1 + 2 + 3$ = The sum of ratio) arcs of suitable measure to cut $\overline{XA}$ at points a, b, c, d, e and f.

(v) similarly using compasses of same measure draw six another arcs to cut $\overline{YB}$ at points 6, 5, 4, 3, 2 and 1.

(vi) Join b with 3, e with 6, to cut $\overline{XY}$ at point C and D.

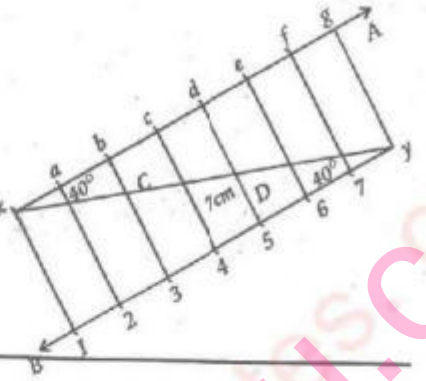
(vii) In this way. The given $\overline{XY}$ is divided in three parts in the ratio of 1:2:3 $m\overline{Xx} : m\overline{CD} : m\overline{DY} = 1:2:3$.

8. Divide $m\overline{XY} = 7cm$ in the ratio of 2:2:3.

Solution:

Steps of Construction:

(i) Draw $m\overline{XY}$ 7cm (write all steps of constructions point 2 to point 7 as Q 7)

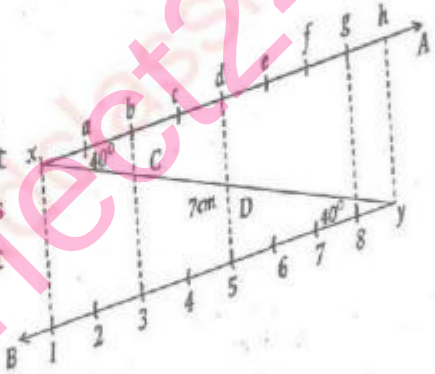


9. Divide a line segment, measuring 8.4cm in the ratio of 4:2:1.

Solution:

Step of Construction:

(i) Draw a line segment 8.4cm (write all steps of construction point 2 to point 7 as Q7)



EXERCISE 11.2

A. Constraction the following:

1. A triangle ABC in which the ratio among the side of the triangle is 1:2:3 and the perimeter in 9.6cm.

Solution:

Given:

ΔABC, its perimeter is 9.6cm. Ratio of the sides is $\overline{AB} : \overline{BC} : \overline{CA} = 1:2:3$.

Required to Construction:

To construct a ΔABC from the given data.

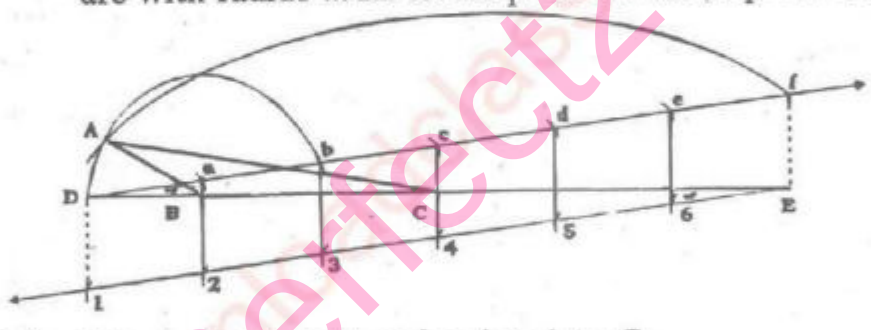
Steps of Construction:

(i) With the help of ruler, draw $\overline{DE}$ measuring $9.6cm$ = perimeter of the triangle.

(ii) Divide $\overline{DE}$ in th egiven ratio $1:2:3$, we get the lengths of three sides $\overline{AB}$, $\overline{BC}$ and $\overline{CA}$ as under: $m\overline{AB} = m\overline{DB}$ (the shortest side), $mBC = mBC$ and $m\overline{CA} = m\overline{CE}$ (the greatest side).

(iii) Take poitn B as centre, draw an arc with radius $m\overline{DB}$.

(iv) Take another point C as centre, draw an other arc with radius $m\overline{CE}$ to cut previous arc at point A.



(v) Join point A to B and point A to C.

Thus we get the triangle ABC wich is the required triangle. Its perimeter is $9.6cm$ and its sides are in the ratio of $1:2:3$.

2. *Construct an isosceles triangle when its perimeter is 10.5cm and ratio of the three sides is 2:2:3.*

Solution:

Given:

ΔPAR is an isosceles triangle. Its perimeter is $10.5cm$ and the ratio among the sides is $2:2:3$.

Required to Construct:

Draw an isosceles triangle PQR from above data.

Steps of construction:

(i) Draw a line segment $\overline{XY}$ measuring $10.5cm$ with the help of ruler.

(ii) Divide the $\overline{XY}$ in the ratio of $2:2:3$. We get the measure of three sides of the triangle as $\overline{XP}$, $\overline{PQ}$ and $\overline{QY}$.

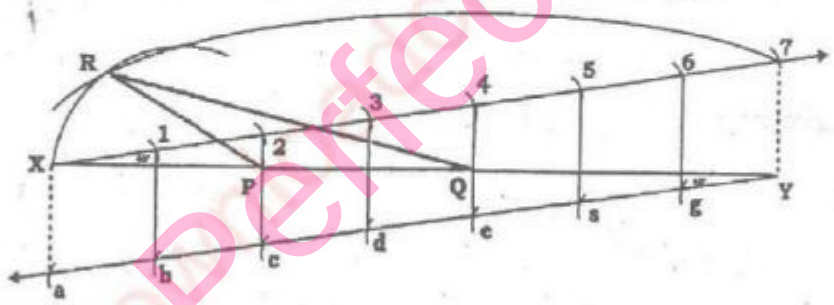
(iii) Take point P as centre and radius $= m\overline{XP}$ (one side of D), draw an arc.

(iv) Again take point Q as centre and radius $= m\overline{QY}$ ($3rd$ side of The D), draw an other arc, to cut previous arc at point R.

(v) Join points P and R to draw $\overline{PR}$.

(vi) Again join points R and Q to draw $\overline{QR}$.

(vii) Hence PQR is required isosceles triangle.



3. *Construct an isosecles triangle. It perimeter is 90mm and ratio among the side 2:3:4.*

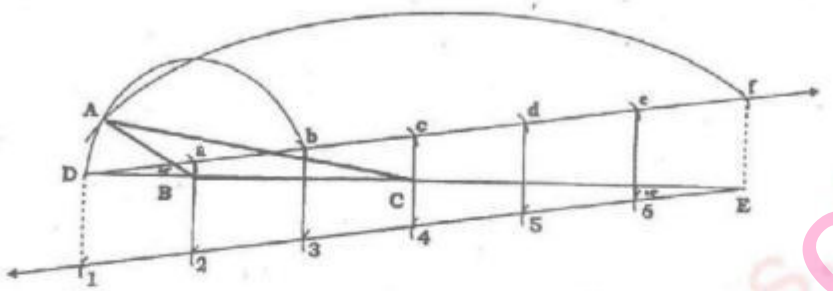
Solution:

$90mm = 9cm$

(i) Draw a line segment $\overline{AB}$ measuring $9cm$.

(ii) Take point B as centre, draw an arc with radius $m\overline{DB}$.

(iii) Take another point C and centre, draw an other arc with radius $m\overline{CE}$ to cut previous arc at point A.



(iv) Join point A to B and point A to C.

Thus we get the triangle ABC which is the required triangle. Its perimeter is $9\ cm$ and its sides are in the ratio of $2:3:4$.

4. *Construct an isosceles triangle when its perimeter is 10cm and ratio of the three sides is 5:3:2.*

Solution:

Given:

ΔPAR is an isosceles triangle. Its perimeter is $10cm$ and the ratio among the sides is $5:3:2$.

Required to construct:

Draw an isosceles triangle PQR from above data.

Steps of Construction:

(i) Draw a line segment $\overline{XY}$ measuring $10cm$ with the help of ruler.

(ii) Divide the $\overline{XY}$ in the ratio of $5:3:2$. We get the measure of three sides of the triangle as $\overline{XP}$, $\overline{PQ}$ and $\overline{QY}$.

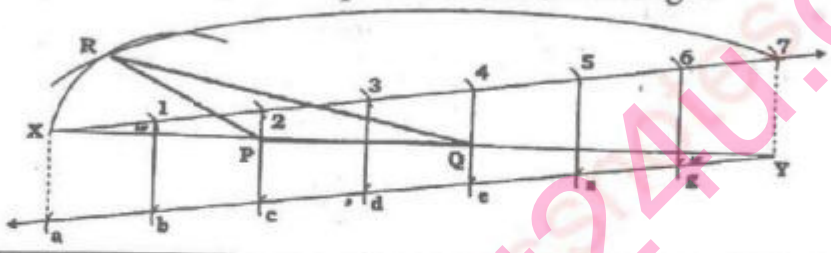
(iii) Take point P as centre and radius = $m\overline{XP}$ (one side of D), draw an arc.

(iv) Again take point Q as centre and radius = $m\overline{QY}$ ($3rd$ side of the D), draw an other arc, to cut previous arc at point R.

(v) Join points P and R to draw $\overline{PR}$.

(vi) Again join points R and Q to draw $\overline{QR}$.

(vii) Hence PQR is required isosceles triangle.



5. *Construct an isosceles triangle when its perimeter is 88mm and ratio of the three sides is 3:5:2.*

Solution:

Given:

ΔPQR is an isosceles triangle. Its perimeter is 88mm and the ratio among the sides is 3:5:2.

Reqruied to Construct:

Draw an isosceles triangle PQR from above data.

Steps of Construction:

(i) Draw a line segment $\overline{XY}$ measuring 88mm with the help of ruler.

(ii) Divide the $\overline{XY}$ in the ratio of 3:5:2. We get the measure of three sides of the triangle as $\overline{XP}$, $\overline{PQ}$ and $\overline{QY}$.

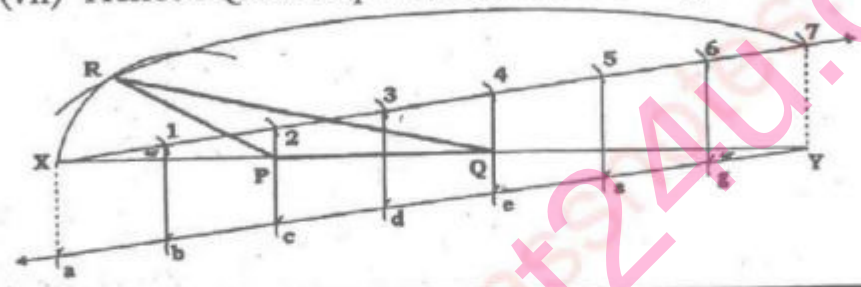
(iii) Take point P as centre and radius = $m\overline{XP}$ (one side of D), draw an arc.

(iv) Again take point Q as centre and raddius = $m\overline{QY}$, (*3rd* side of the D), draw another arc, to cut previous arc at point R.

(v) Join points P and R to draw $\overline{PR}$.

(vi) Again join points R and Q to draw $\overline{QR}$.

(vii) Hence PQR is required isosceles triangle.



ECERCISE 11.3

1. Construct the following equilateral triangles when the measure of base is as follows:

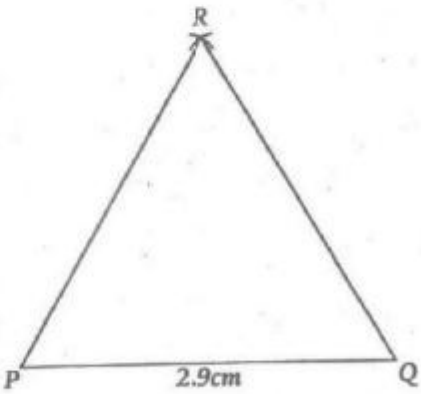
(i) 2.9cm:

Solution:

Steps of Construction:

(i) Draw a line segment PQ 2.9cm.

(ii) Take point P as center, draw an arc with radius 2.9cm.



(iii) Again take point Q as center, draw another arc with same radius to the intersect the previous arc at point R.

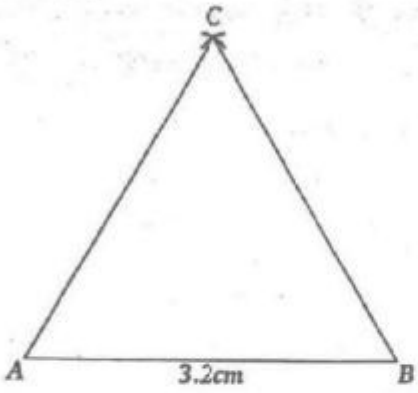
(iv) Join points P and R and draw $\overline{PR}$.

(v) Join points Q and R and draw $\overline{QR}$.

(vi) In this way we get the required equilateral triangle PQR whose every side is of 3.6cm.

(ii) 3.2cm:

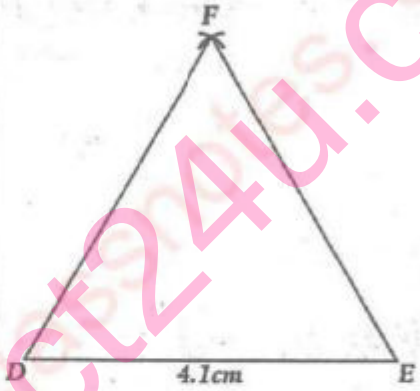
Ans:



Write the steps of construction as Q1. (i)

(iii) 4.1

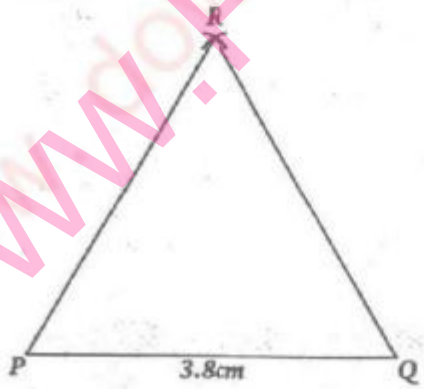
Ans:



Write the steps of construction as Q1. (i)

(iv) 3.8cm:

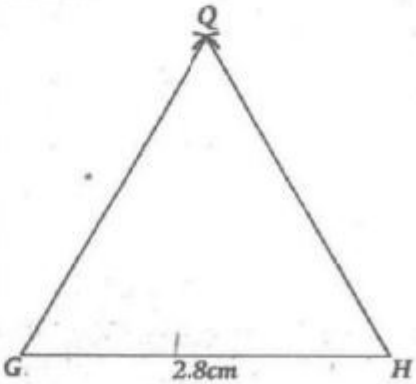
Ans:



Write the steps of construction as Q1. (i)

(v) 2.8cm:

Ans:

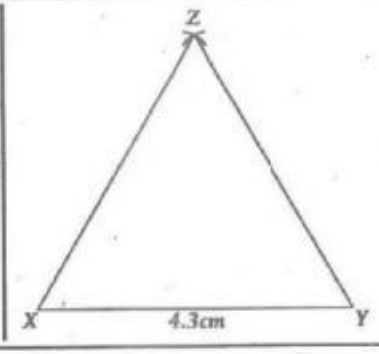


Write the steps of construction as Q1. (i)

(vi) 4.3cm:

Ans:

Write the steps of construction as Q1. (i)

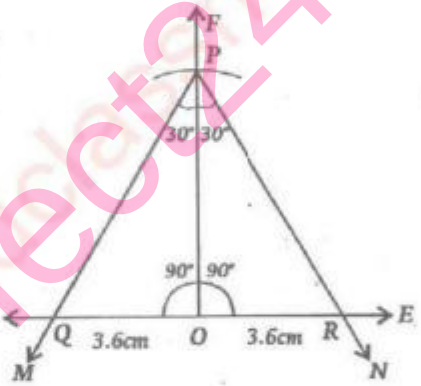


2. *Constract the following equilateral traingles. When the measurement of its altitude is as follows.*

(i) 3.6cm:

Solution:

Steps of Construction:



(i) Draw $\overline{DE}$ of suitable measure with the help of ruler.

(ii) Take any point O on it.

(iii) Draw $\overline{OF} \perp \overline{DE}$ with the help of protractor.

(iv) Take point O as center and radius $= 3.6cm$, draw an arc to cut $\overline{OF}$ at poitn P, to get $\overline{OP}$ an altitude.

(v) As we know that every angle of equilateral triangle is of 60^o and an altitude of the given equilateral triangle bisects the angle at vertex. Draw angles of 30^o with the help of protractor at point P such that $m\angle OPM = m\angle OPN = 30^o$.

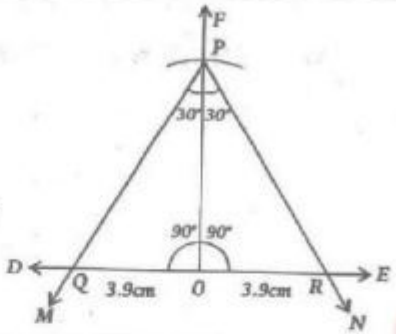
(vi) Let $\overline{PM}$ intersect $\overline{DE}$ at point Q and $\overline{PN}$ intersect $\overline{DE}$ at point R thus PQR is the required equilateral triangle.

(ii) 3.9cm:

Solution:

Step of Construction:

Write the tep of construction as (i)



(iii) 4.3cm:

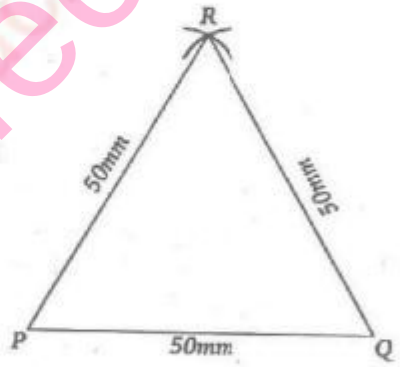
Solution:

For solution, figure and step of construction see page no.199 example of textbook.

3. Construct an equilateral PQR in which the measure of its base is 50mm long.

Solution:

Steps of Construction:



(i) Draw a line segment PQ measuring $50mm$.

(ii) Take point P as center, draw an arc with rading $50mm$.

(iii) again take point Q as center, draw another are with same radius to intersect the previous arc at point R.

(iv) Join points P and R and draw $\overline{PR}$.

(v) Join points Q and R and draw $\overline{QR}$.

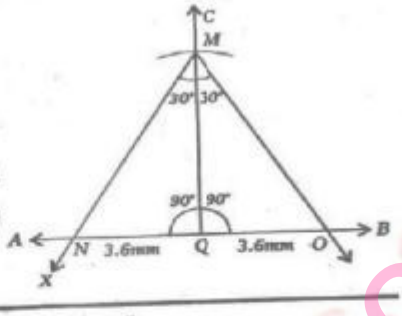
(vi) In this way we get the required equilateral triangle PQR whose every side is of $50mm$.

4. Construct an equilateral triangle MNO in which its altitude 36mm long.

Solution:

Steps of Construction:

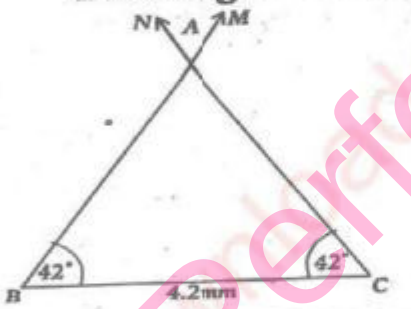
For steps of construction See on page No. 199 example of textbook.



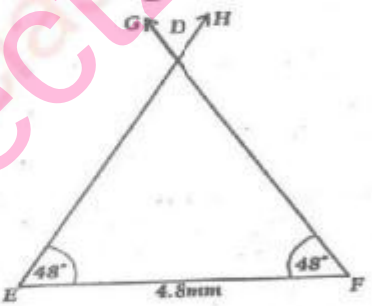
EXERCISE 11.4

1. Costruct isoseates triangle for following data.

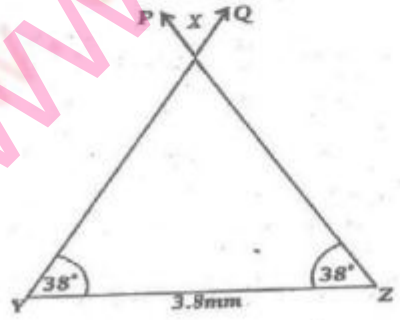
(i) Base = 4.2 cm, Base angle = 42°.



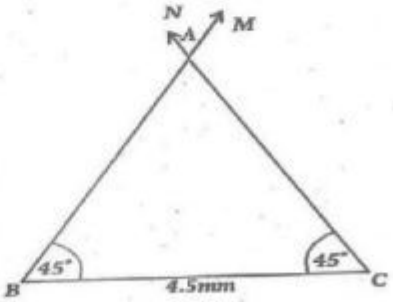
(ii) Base = 4.8cm, Base triangle = 48°.



(iii) Base = 38mm, Base angle = 38°.

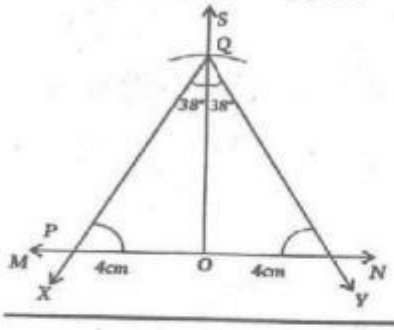


(iv) Base = 45mm, Base angle = 45°.

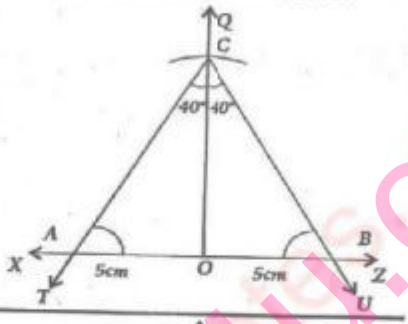


2. Construct the following isoseeles triangle when the measure of vertical angles and altitude.

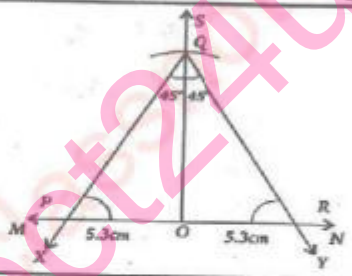
(i) Vertical angle 76°, Altitude = 4cm.



(ii) Vertical angle 80°, Altitude = 5cm.



(iii) Vertical angle 90°, Altitude = 5.3cm.



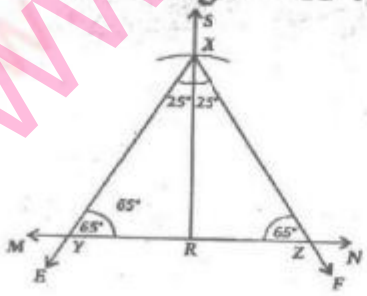
3. Construct the isosceles triangle when the measure of altitude and base angle are given.

(i) Altitude = 4.5, Base angle = 55.

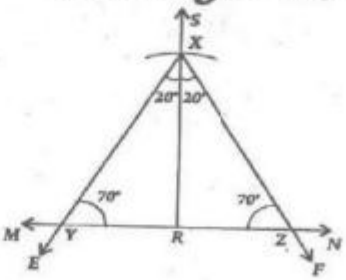
Solution:

For solution see example on Page 203 of text book.

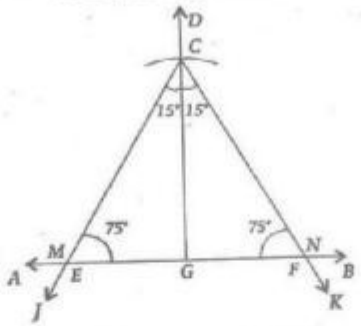
(ii) Altitude= 5.9mm, Base angle = 65°.



(iii) Altitude= 4.7cm, Base angle = 70°.



(iv) Altitude = 59mm, Base angle = 75°.



EXERCISE 11.5

1. Construt the following parallelograme in which the lengths of two adjacent sides and the measurement to their included angle are given as under.

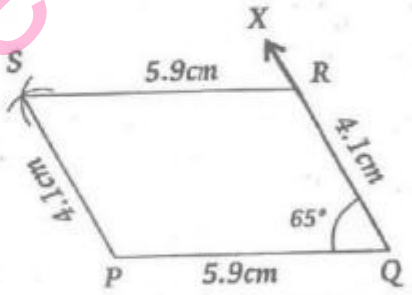
(i) Parallelogram:

$PQRS$

$m\overline{PQ} = 5.9cm$

$m\overline{QR} = 4.1cm$

$m\angle PQR = 65^o$



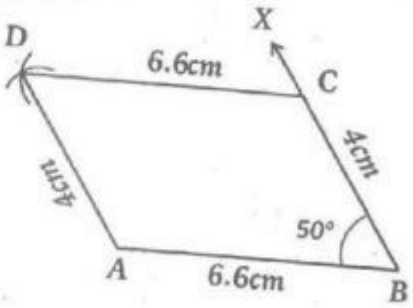
(ii) Parallelogram:

$ABCD$

$m\overline{AB} = 6.6cm$

$m\overline{AD} = 4cm$

$m\angle BAD = 50^o$



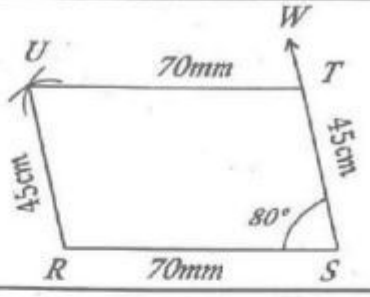
(iii) Parallelogram:

RSTU

$m\overline{RS} = 70mm$

$m\overline{ST} = 45mm$

$m\angle RST = 80^o$



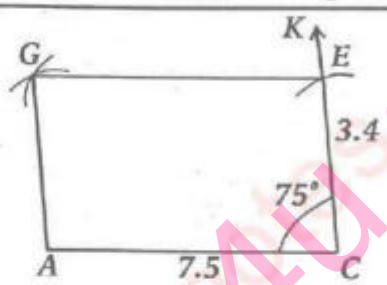
(v) Parallelogram :

ACEG

$m\overline{AC} = 7.5cm$

$m\overline{CE} = 3.4cm$

$m\angle ACE = 75^o$



(iv) Parallelogram LMNO $mON = 6cm$, $mMN = 3.5cm$, $m\angle MNO = 55^o$.

Solution:

For solution see example on Page 205 of Text book.

2. Construct the following parallelograms in which the measurement of two adjacent sides and the length of one diagonal are given as under:

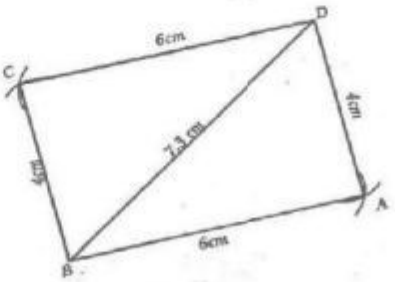
(i) Parallelogram:

ABCD

$m\overline{BC} = 6cm$

$m\overline{CD} = 4cm$

$m\overline{BD} = 7.3cm$



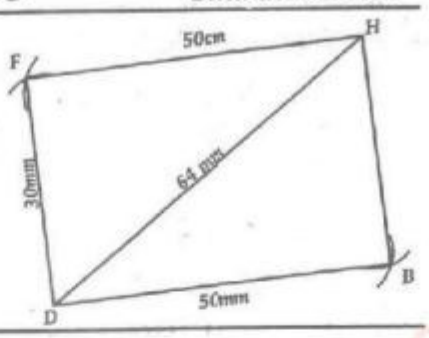
(ii) Parallelogram:

BDFH

$m\overline{BD} = 50mm$

$m\overline{BH} = 30mm$

$m\overline{HD} = 64mm.$



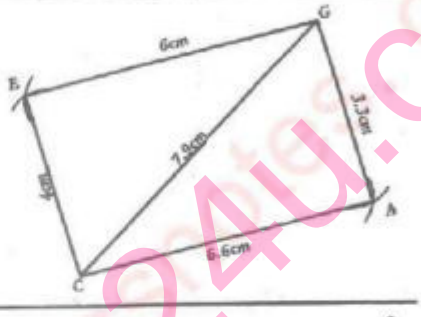
(iii) Parallelogram:

ACEG

$m\overline{AC} = 6.6mm$

$m\overline{AG} = 3.3cm$

$m\overline{CG} = 7.9mm.$



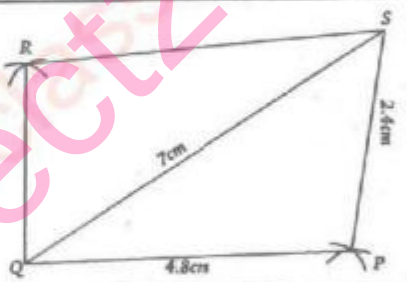
(iv) Parallelogram :

PQRS

$m\overline{RS} = 4.8cm$

$m\overline{RQ} = 2.9cm$

$m\overline{SQ} = 7cm$



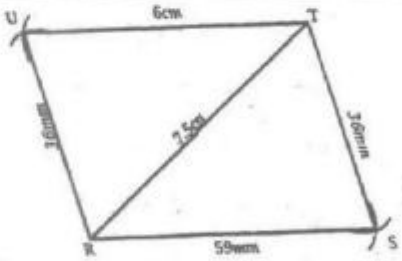
(v) Parallelogram :

RSTU

$m\overline{RS} = 59mm$

$m\overline{ST} = 36mm$

$m\overline{TR} = 7.5cm.$



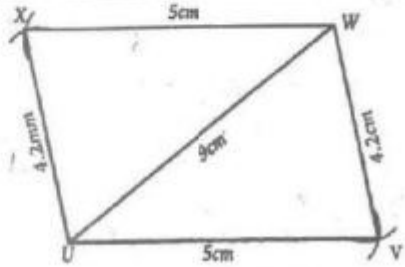
(vi) Parallelogram:

UVWX

$m\overline{UV} = 5cm$

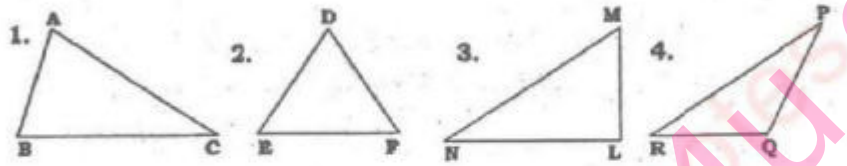
$m\overline{VW} = 4.2cm$

$m\overline{UW} = 9cm.$



EXERCISE 11.6

1. ***Verify in the following that the sum of the measures of the angles of a triangle is 180°. Measure three angles of each triangle by protractor. Find their sum.***



Solution:

1. ΔABC

$m\angle BAC + mABC + m\angle BCA = 180^\circ$

$80^\circ + 50^\circ + 50^\circ = 180^\circ$

$180^\circ = 180^\circ$ verified

2. ΔDEF

$m\angle EDF + mDEF + mEFD = 180^\circ$

$55^\circ + 60^\circ + 65^\circ = 180^\circ$

$180^\circ = 180^\circ$ verified

3. ΔMLN

$m\angle MN + mMLN + m\angle LMN = 180^\circ$

$90^\circ + 45^\circ + 45^\circ = 180^\circ$

$180^\circ = 180^\circ$ verified

4. ΔPQR

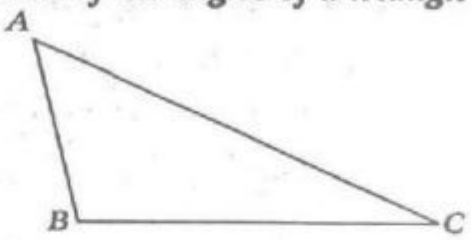
$m\angle QPR + m\angle PQR + m\angle QRP = 180^\circ$

$120^\circ + 40^\circ + 20^\circ = 180^\circ$

$180^\circ = 180^\circ$ verified

2. ***Draw any three different triangles and measure the angles of each triangle. Also verify that the sum of the angles of a triangle is 180°.***

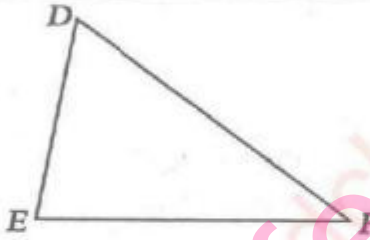
(i)



Solution:

$$m\angle BAC + m\angle ABC + m\angle BCA = 180^\circ$$
$$100^\circ + 40^\circ + 40^\circ = 180^\circ$$
$$180^\circ = 180^\circ \text{ verified}$$

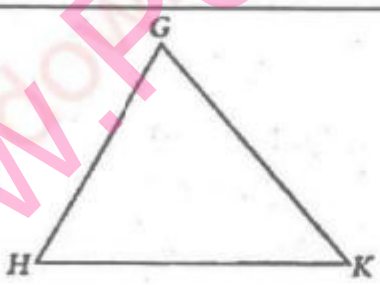
(ii)



Solution:

$$m\angle EDF + m\angle DEF + m\angle EFD = 180^\circ$$
$$80^\circ + 50^\circ + 50^\circ = 180^\circ$$
$$180^\circ = 180^\circ \text{ verified}$$

(iii)



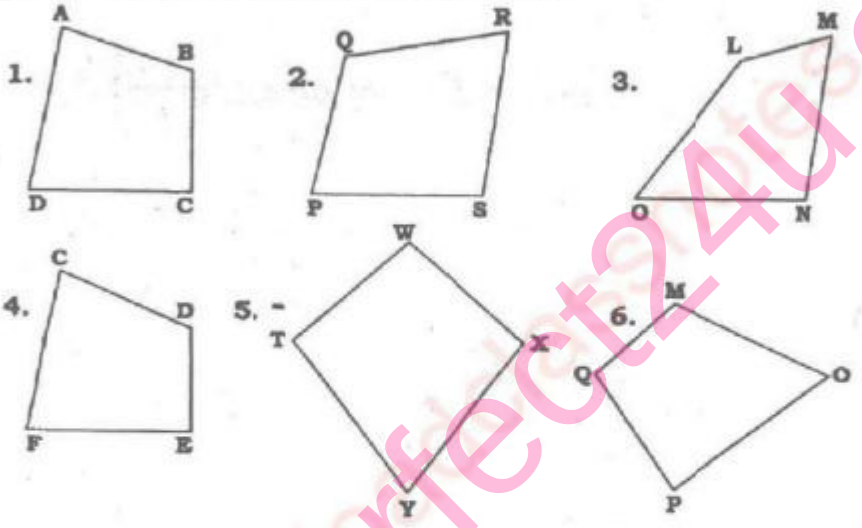
Solution:

$$m\angle EDF + m\angle DEF + m\angle EFD = 180^\circ$$
$$80^\circ + 50^\circ + 50^\circ = 180^\circ$$
$$180^\circ = 180^\circ \text{ verified}$$

3. *Verify in the following that the sum of the measure of angles of four angles of a quadrilateral is 360°.*

Solution:

First we measure the angles with the help of protractor, and then find their sum.



4. *Draw any two quadrilaterals measure all the angles of each and every quadrilateral verify that the sum of the angles of a quadrilateral is 360°.*

Solution:

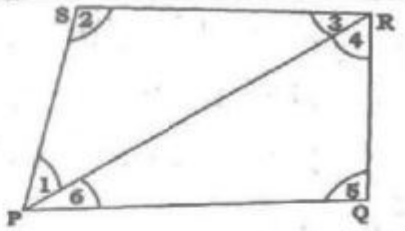
Given:

PQRS is a quadrilateral.

There are four angles of the quadrilateral.

(i) $\angle SPQ$ (ii) $\angle PQR$, (iii) $\angle QRS$ and (iv) $\angle RSP$ or $\angle P$, $\angle Q$, $\angle R$ and $\angle S$.

We have to verify that $m\angle SPQ + m\angle PQR + m\angle QRS + \angle RSP = 360^o$ or $m\angle P + m\angle Q + m\angle R + m\angle S = 360^o$.



Required to Verify:

The sum of the angles of a given quadrilateral $PQRS$ is 360^o.

Steps:

(i) In above given figure of quadrilateral $PQRS$, points, R and P to draw the diagonal of the quadrilateral $PQRS$.

(ii) The diagonal PR divides the given quadrilateral in two triangles: ΔPSR and ΔPQR.

(iii) We know that the sum of the angles in a triangle is 180^o. So sum of the angles of the given quadrilateral = (sum of the angles of ΔPSR) + (Sum of the angles of ΔPQR).

(iv) In ΔPSR, we observe that: $m\angle SPR + m\angle PSR + m\angle SRP = 180^o$ or $m\angle 1 + m\angle 2 + m\angle 3 = 180^o$.....(a)

In ΔPQR, we observe that: Sum of the angles of the given quadrilateral $= m\angle QPR + m\angle PRQ + m\angle PQR = 180^o$ or $m\angle 6 + m\angle 4 + m\angle 5 = 180^o$.....(b)

(v) Now we have to find sum of all the angles of the given quadrilateral $PQRS$. i.e. Adding the above results of (A) and (B), we get: $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 6 + m\angle 4 + m\angle 5 = 180^o + 180^o = 360^o$ or $m\angle 1 + m\angle 6 + m\angle 2 + m\angle 3 + m\angle 4 + m\angle 5 = 360^o$ or $m\angle P + m\angle S + m\angle R + m\angle Q = 360^o$. or $m\angle P + m\angle Q + m\angle R + m\angle S = 360^o$.

Hence or verified that the sum of the four angles of the given quadrilateral $PQRS$ is 360^o.

REVIEW EXERCISE 11

A. Answer the following short question:

1. What is line segment? Describe its properties.

Ans: Line Segment:

A portion of line is a line segment a line segment has two end points while a line have no points. Line can be extended to any lenth on both sides.]

Properties:

(i) A line segment has two end points.
(ii) A line segment has lenth.
(iii) A line segment can be divided into many equal segment.
(iv) A line segment can be divided into the ratio like 1:2:3.
(v) A line segment can be divided into any given number of equal segment *e.g.* $m\overline{CD} = 120mm$.

2. What is triangle > Describe its properties.

Ans: Triangle:

A triangle is a polygon having three sides and three angle.

Properties:

(i) A triangle has three angle.
(ii) A triangle has three sides.
(iii) The sum of the angles of a triangle is 180^{o}.

3. *Name the different kind of a triangle.*

Ans: Kind of a triangle:

The name of different kind of a triangle are as under.

(i) Equilateral triangle.
(ii) Isosceles triangle.
(iii) Parallel angle triangle

4. *When two line segments will be congruent?*

Ans: Two line segments are congruent, if they are of equal length. i.e. $\overline{AB} \cong \overline{CD}$ when $m\overline{AB} = m\overline{CD}$

5. *What is the sum of the angles of a triangle? verify it with the help of a protractor.*

Ans: The sum of the angles of a triangle is 180^o for verification of it with the help of a protractor see exercise no. 11.6 Q. No. 1and Q.2

6. *What is a quadrilateral describe only the names of different kinds.*

Ans: Quadrilateral:

A quadrilateral is a parallelogram shap whose opposite sides are congruent and parallel.

Kind of quadrilateral:

(i) Square quadrilateral.
(ii) Rectangle quadrilateral
(iii) Rhombus quadrilateral.

7. What are the properties of an equilateral triangle?

Ans: (i) An equilateral triangle has three congruent sides.

(ii) Every angle of an equilateral triangle is of 60^o.

(iii) Every angle of an equilateral triangle is acute angle.

---

8. Is square a rectangle, a parallelogram or a rohmbus?

Ans: Yes, a square is a rectangle: square is a parallelogram a square is a rhombus.

---

9. What is the sum of the angles of a quadrilateral? verify it with proof.

Ans: The sum of the angles of a quadrilateral is 360^o. For verfication it with proof see exercise No. 11.6 Q.3.

---

10. Devine an altitude and vertex angles of a triangle?

Ans: An altitude of a triangle:

An altitude is drawn from vertex to the base and it bisects the vertex angle.

Vertex Angle:

Sum of two equal base angles vertex angle = 180^o.

B. Construct the following with neat and clean figure.

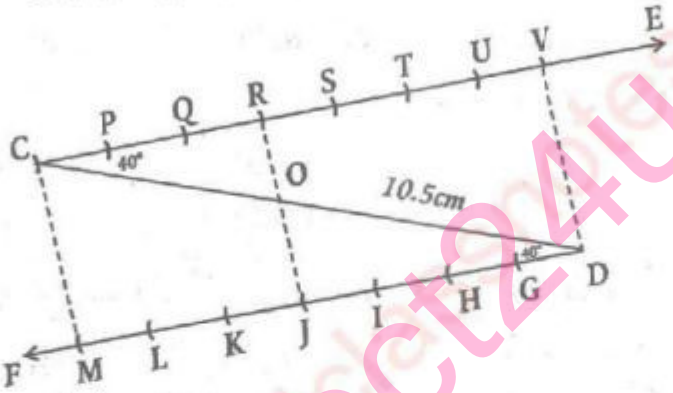
1. Divide a line segment of 10.5cm in the ratio of 3:4.

Solution:

$= \overline{CD} = 10.5cm$

$= 3:4$

$= 3 + 4 = 7$



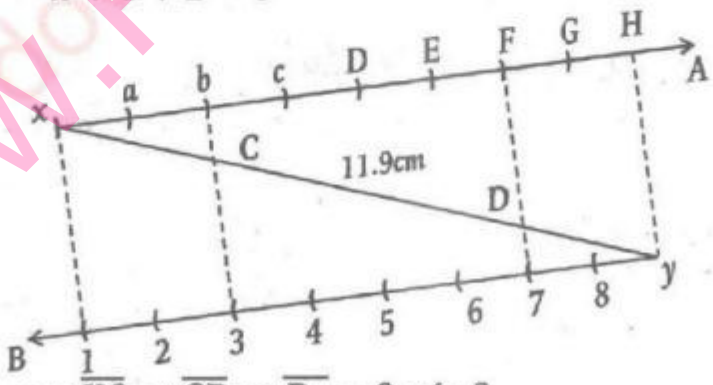
$= m\overline{CO} : m\overline{OD} = 3:4$

2. Divide a line segment 11.9cm in the ratio 2:4:2.

$= \overline{xy} = 11.9cm$

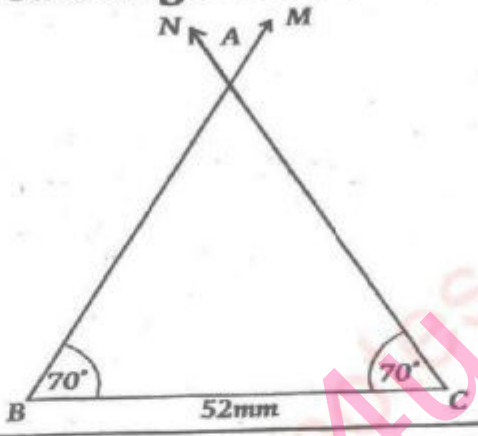
$= 2:4:2$

$= x + 4 + 2 = 8$



$= m\overline{XC} : m\overline{CD} : m\overline{Dy} = 2 : 4 : 2$

3. Construct an isosecles triangle in which base measures 52mm and measures of base angle is 70°.



$m\angle ABC = 70^\circ$

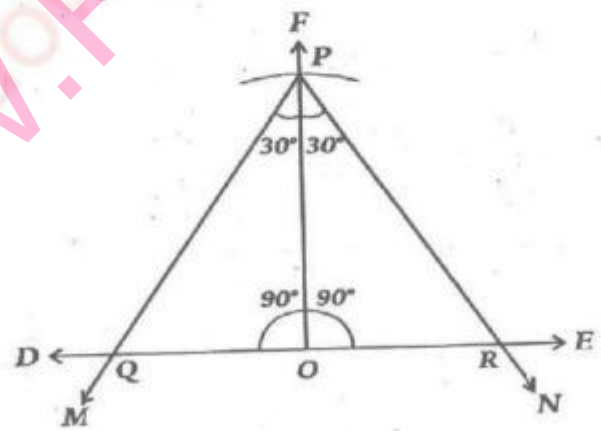
$\overline{AB} \cong \overline{AC}$

4. Construct a parallelogram PQRS in which $m\overline{SR}$ = 4.1cm $m\overline{QR}$ = 3.1cm and $m\angle QRs = 70^\circ$.

Solution:

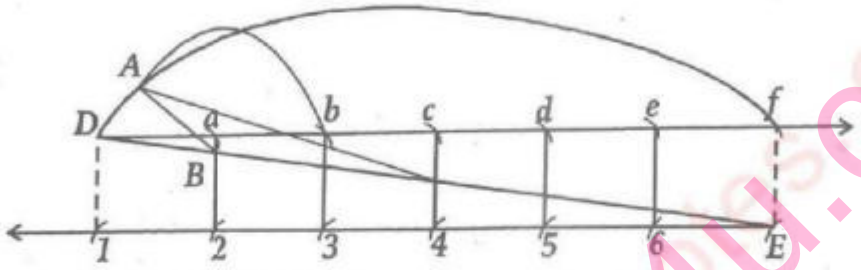
For solution see example on page 205 of textbook.

5. Construct an equilateral triangle whose altitude is of length 6cm. measures of base angle is 70°.



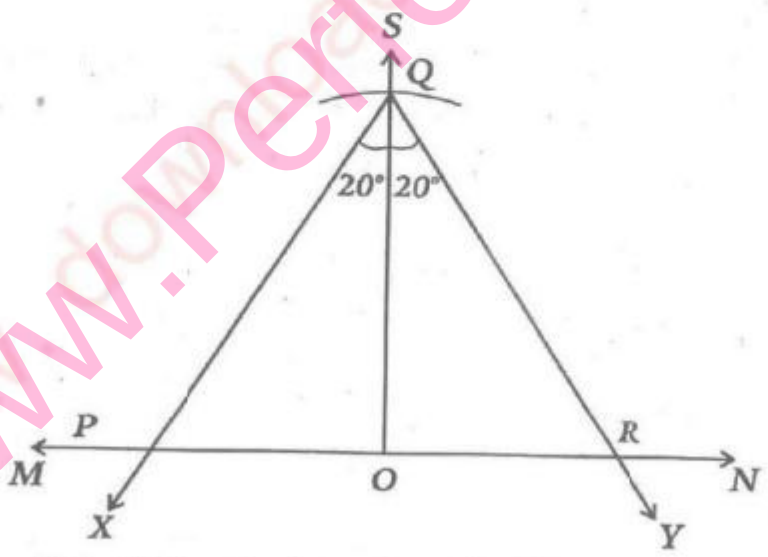
6. Construct a triangle whose perimeter is 129mm. The ratio between the lengths of the sides is 3:4:5.

Ans:



7. Construct an isosecles triangle in which altitude is 6.2cm and the vertex angle is 40°.

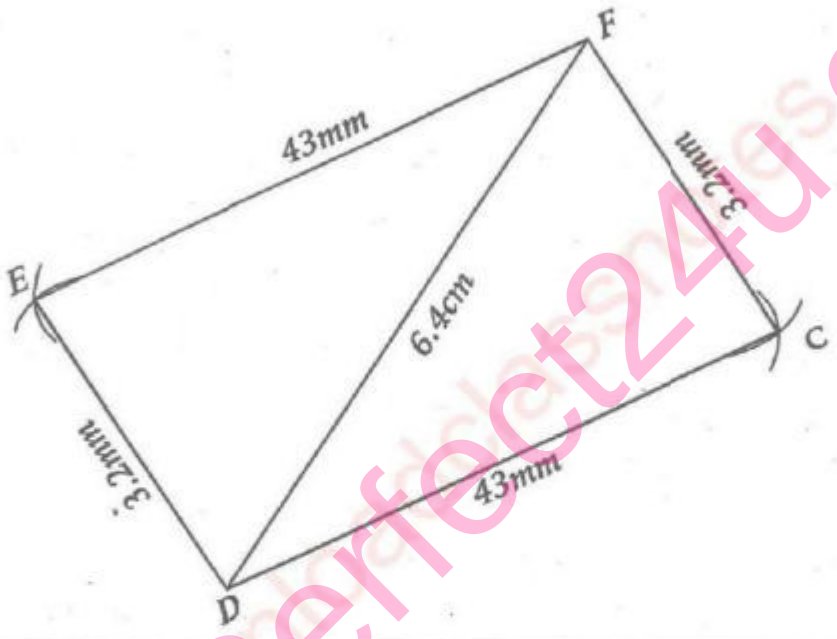
Ans:



$\overline{QO} \perp \overline{PR}$ and $m\angle PQR = 40^\circ$ $m\overline{QP} = m\overline{QR}$

8. *Construct a parallelogram in which the lengths of two adjacent sides are 43mm and 32mm. The length of one of its diagonal is 6.4cm.*

Ans:



C. Chose the correct answer:

(i) A polygon with three sides, three vertices with a sum of interior angles 180^o is called triangle .

(a) quadrilateral (b) line segment
(c) triangle (d) circle

Ans: (c) triangle

(ii) Base angle of an isosceles triangle is 67^o . When the vertex angle is 56^o.

(a) 67^o (b) 70^o (c) 60^o (d) 90^o

Ans: (a) 67^o

(iii) A parallelogram with each of its angle 90^o is Rectangle .

(a) Circle (b) Rectangle
(c) Trapezium (d) Triangle

Ans: (b) Rectangle

(iv) Two line segments OP and QR are congruent, if

(a) $mOP = mQR$ (b) $mOP > mQR$
(c) $mOP < mQR$ (d) $mOP \neq mQR$.

Ans: (a) $mOP = mQR$

(v) The sum of the interior angles of a quadrilateral is 360^o .

(a) 90^o (b) 180^o (c) 270^o (d) 360^o

Ans: (d) 360^o

(vi) A quadrilateral whose opposite sides are ongruent and parallel is called rectangle .

(a) Trapezium (b) Parallelogram
(c) Square (d) Rectangle

Ans: (d) Rectangle

(vii) In a triangle, the sum of two base angles is 90^o. Then the measure of its vertex angle is 90^o .

(a) 45^o (b) 90^o (c) 135^o (d) 180^o

Ans: (b) 90^o

(viii) In a quadrilateral the sum of the three angles of a quadrilateral is 270^o, then the measure of its fourth angle is 90^o .

(a) 90^o (b) 180^o (c) 270^o (d) 360^o

Ans: (a) 90^o