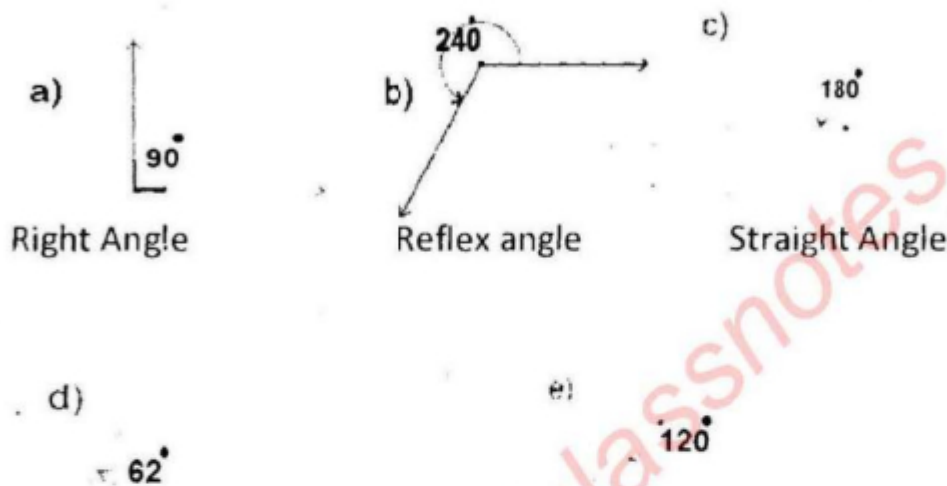


MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

Unit No: 7	GEOMETRY
	Exercise No: 1

Q1: Draw a right angle using cardboard and compare it with the given angles to accurately indicate the types of angles.



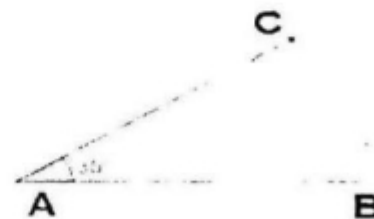
- (i) Take two pieces of cardboard and place them to make the shape of right angle.
 (ii) Place the one piece of cardboard in the position of AB and place another piece of cardboard in the position of AC. Thus right angle is constructed with help of cardboard.

Q2: Use the protector to draw the given angles.

(a) 35° (b) 45° (c) 240° (d) 180° (e) 90° (f) 60° (g) 300° (h) 155°

Sol: (a) 35°

- (i) Draw a ray AB.
 (ii) Place the protector on ray AB such that the center point of protractor is exactly at point



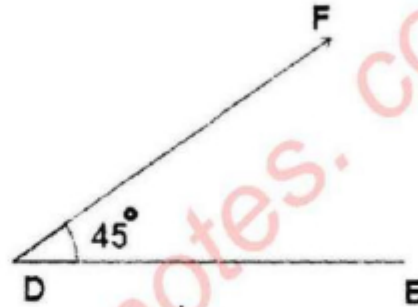
A and the baseline of the protector is designed with the arm AB.

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

- (iii) Read the inner scale on the protector and mark a point C at 35°
(iv) Join A to C
(v) $\angle BAC = 35^\circ$ is the required angle.

(b) 45°

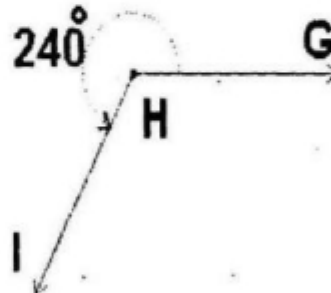
- Sol: (i) Draw a ray DE.
(ii) Place the protector on the ray $\overline{DE}$ such that the centre point of protector is exactly at point D and the baseline of protector is aligned with the arm DE.



- (iii) Read the inner scale on the protector and mark a point F at 45°
(iv) Join D to F
(v) $\angle EDF = 45^\circ$ is the required angle.

(c) 240°

- Sol: To construct a reflex angle of 240° , first we subtract the reflex angle from 360° and then draw the resulting angle, below the ray.
 $360^\circ - 240^\circ = 120^\circ$



- (i) Draw a ray H.G
(ii) Place the protector upside down on ray HG so that the centre of the protector is on point PH and the baseline of the protector is aligned with the arm HG.
(iii) Read the scale on the protector and make G point I as 120°
(iv) Join H to I
(v) $\angle GHI = 240^\circ$ is the required reflex angle.

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(d) 180°

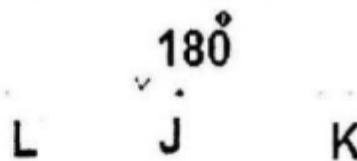
Sol: (i) Draw a ray JK

(ii) place the protector on the ray JK such that the centre point of protector is at point J and the baseline of the protector is aligned with the arm JK.

(iii) Read the scale on the protector and mark a point L at 180° .

(iv) Join L to J.

(v) $\angle KJL = 180^\circ$ is the required straight angle.



(e) 90°

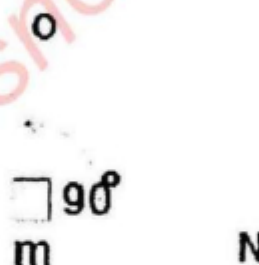
Sol: (i) Draw a ray MN.

(ii) place the protector on the ray MN such that the centre point of protector is at point M and the baseline of the protector is aligned with the arm MN

(iii) Read the scale on the protector and mark a point O at 90° .

(iv) Join M to O.

(v) $\angle NMO = 90^\circ$ is the required right angle.



f) 60°

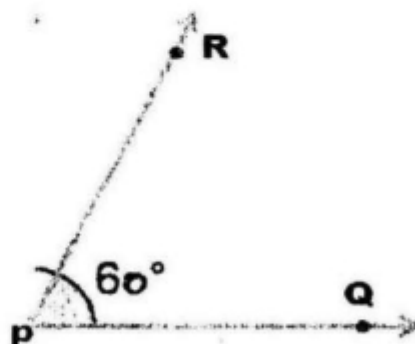
Sol: (i) Draw a ray PQ.

(ii) Place the protector on the ray PQ such that the centre point of protector is at point P and the baseline of the protector is aligned with the arm PQ.

(iii) Read the scale on protector and mark a point R at 60° .

(iv) Join P to R.

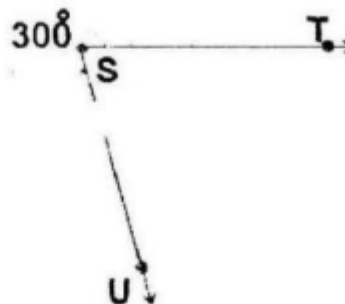
(v) $\angle QPR = 60^\circ$ is the required angle.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(g) 300°

Sol: To construct a reflex angle of 300° first we subtract the reflex angle from 360° and then draw the resulting angle below the ray.
 $360^\circ - 300^\circ = 60^\circ$



(i) Draw a ray ST.

(ii) Place the protector upside down on ray ST so that the centre of the protector is on point S and the baseline of the protector is aligned with the arm ST.

(iii) Read the scale on protector and mark a point U at 60° .

(iv) Join S to U

(v) $\angle TSU = 300^\circ$ is the required reflex angle.

(h) 155°

Sol: (i) Draw a ray XY.

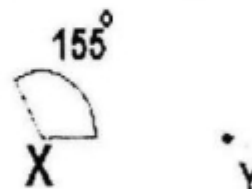
(ii) Place the protector on ray XY such as that the centre of the protector is on point X and the baseline of the protector is aligned with the arm XY.

(iii) Read the scale on protector and mark a point Z at 155° .

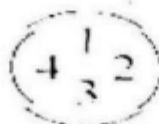
(iv) Join X to Z

(v) $\angle XYZ = 155^\circ$ is the required angle.

Z



Q3: Identify the adjacent angles from the given angles.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

Sol: Since two angles are called adjacent angle if

- They have common arm
- They are on the opposite side of the common arm

They have a common vertex,

so according to the above definitions

the pairs ($\angle 1$ and $\angle 2$) ($\angle 2$ and $\angle 3$), ($\angle 3$ and $\angle 4$) and
 ($\angle 4$ and $\angle 1$) are adjacent angles.

Q4: Find the supplement of the following.

(a) 98° Note: Sum of two supplementary angles = 180° Sol: let x° be the supplement of 98° Two supplementary angles = 180° $(a) x^\circ + 98^\circ$ $\rightarrow x^\circ = 180^\circ - 98^\circ$ $\rightarrow x^\circ = 82^\circ$ So supplement of 98° is 82°.	(b) 180° Note: Sum of two supplementary angles = 180° Sol: Let x° be supplement of 180° So $x^\circ + 180^\circ = 180^\circ$ $\rightarrow x^\circ = 180^\circ - 180^\circ$ $\rightarrow x^\circ = 0^\circ$ So Supplement of 180° is 0°.
(c) 115° Sol: let x° be the supplement of 115° So, $x^\circ + 115^\circ = 180^\circ$ $\rightarrow x^\circ = 180^\circ - 115^\circ$ $\rightarrow x^\circ = 65^\circ$ So Supplement of 115° is 65°.	d) 3° Sol: let x° be the supplement of 3° So, $x^\circ + 3^\circ = 180^\circ$ $\rightarrow x^\circ = 180^\circ - 3^\circ$ $\rightarrow x^\circ = 177^\circ$ So, supplement of 3° is 177°.
(e) 78° Sol: let x° be the supplement of 78° So, $x^\circ + 78^\circ = 180^\circ$ $\rightarrow x^\circ = 180^\circ - 78^\circ$ $\rightarrow x^\circ = 102^\circ$ So, supplement of 78° is 102°	(f) 135° Sol: let x° be the supplement of 135° so $x^\circ + 135^\circ = 180^\circ$ $\rightarrow x^\circ = 180^\circ - 135^\circ$ $\rightarrow x^\circ = 45^\circ$ Supplement of 135° is 45°

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(g) 90°

Note: Sum of two supplementary angles = 180°

Sol; let x° be the supplement 90°

$$\text{so, } x^\circ + 90^\circ = 180^\circ$$

$$\rightarrow x^\circ = 180^\circ - 90^\circ$$

$$\rightarrow x^\circ = 90^\circ$$

So supplement of 90° is 90° .

Q5: Find the complement of the following.

(a) 12°

Sol: let x° be the complement of 12°

$$\text{So, } x^\circ + 12^\circ = 90^\circ$$

$$\rightarrow x^\circ = 90^\circ - 12^\circ$$

$$\rightarrow x^\circ = 78^\circ$$

So complement of 12° is 78°

(b) 88°

Sol: let x° be the complement of 88°

$$\text{So, } x^\circ + 88^\circ = 90^\circ$$

$$\rightarrow x^\circ = 90^\circ - 88^\circ$$

$$\rightarrow x^\circ = 2^\circ$$

So complement of 88° is 2°

(c) 90°

Sol: let x° be the complement of 90°

$$\text{So, } x^\circ + 90^\circ = 90^\circ$$

$$\rightarrow x^\circ = 90^\circ - 90^\circ$$

$$\rightarrow x^\circ = 0^\circ$$

So, complement of 90° is 0°

(d) 10°

Sol: Let x° be complement of 10°

$$\text{So, } x^\circ + 10^\circ = 90^\circ$$

$$\Rightarrow x^\circ = 90^\circ - 10^\circ$$

$$\Rightarrow x^\circ = 80^\circ$$

So, complement of 10° is 80°

(e) 62°

Sol: Let x° be complement of 62°

$$\text{So, } x^\circ + 62^\circ = 90^\circ$$

$$\Rightarrow x^\circ = 90^\circ - 62^\circ$$

$$\Rightarrow x^\circ = 28^\circ$$

So, complement of 62° is 28°

(f) 40°

Sol: let x° be the complement of 40°

$$\text{So, } x^\circ + 40^\circ = 90^\circ$$

$$\Rightarrow x^\circ = 90^\circ - 40^\circ$$

$$\Rightarrow x^\circ = 50^\circ$$

So, complement of 40° is 50°

(g) 70°

Sol; let x° be the complement of 70° .

$$\text{So, } x^\circ + 70^\circ = 90^\circ$$

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

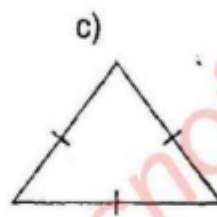
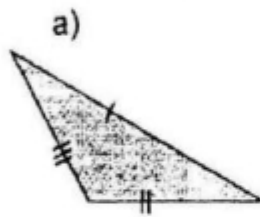
$$\Rightarrow x^\circ = 90^\circ - 70^\circ$$

$$\Rightarrow x^\circ = 20^\circ$$

So, complement of 70° is 20° .

Exercise No: 2

Identify these triangles with respect to their sides.

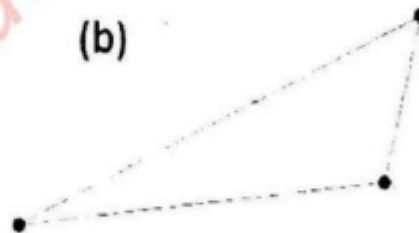


Scalene triangle Isosceles triangle Equilateral Isosceles

Q2: Identify the triangles with respect to their angles.



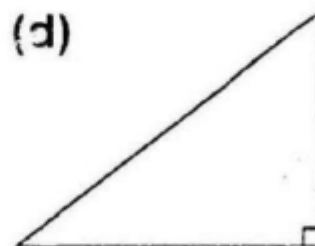
Acute angled triangle



Obtuse angled triangle



Acute angled triangle



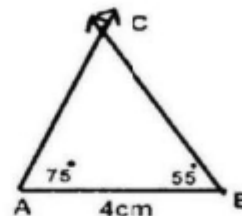
Right angled triangle

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

Q3: Draw a triangle ABC , in which $m\angle A = 75^\circ$, $\overline{AB} = 4\text{cm}$ and $m\angle B = 55^\circ$

Sol: Steps of construction.

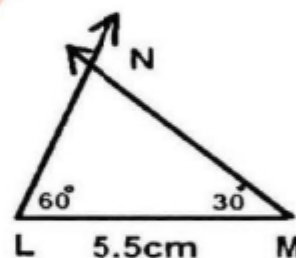
- (i) Draw a line segment $\overline{AB} = 4\text{cm}$
- (ii) Draw an angle of 75° at point A.
- (iii) Similarly draw another angle of 55° at point B .
- (iii) The two rays intersect each other at point C.
- (iv) $\triangle ABC$ is required triangle.



Q4: Draw a triangle LMN , in which $m\angle L = 60^\circ$, $\overline{LM} = 5.5\text{cm}$, and $m\angle M = 30^\circ$

Sol: Steps of construction.

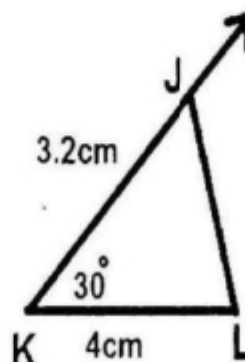
- (i) Draw a line segment $\overline{LM} = 5.5\text{cm}$
- (ii) By using protector, draw an angle of 60° at point L.
- (iii) Similarly draw an angle of 30° at point M.
- (iv) The two rays intersect each other at point N.
- (iv) $\triangle LMN$ is the required triangle.



Q5: Draw a triangle JKL , in which $\overline{KL} = 4\text{cm}$, $\overline{JK} = 3.2\text{cm}$ and $m\angle JKL = 30^\circ$

Sol: Steps of construction.

- (i) Draw a line segment $\overline{KL} = 4\text{cm}$
- (ii) By using protector, draw an angle of 30° at point K.
- (iii) Mark a point J on arm of 30° such as $\overline{JK} = 3.2\text{cm}$
- (iv) Join L to J.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(v) ΔJKL is the required triangle.

Q6: Draw a triangle XYZ, in which $m\overline{YZ}=7.3\text{cm}$, $m\overline{XY}=3.5\text{cm}$ and $\angle XYZ = 40^\circ$

Sol: : Steps of construction.

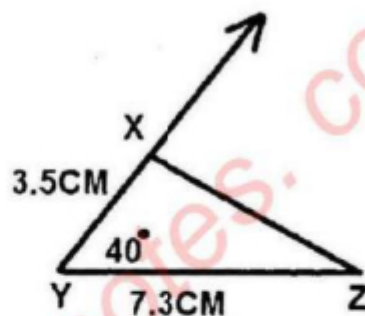
(i) Draw a line segment $m\overline{YZ}=7.3\text{cm}$

(ii) By using protector, draw an angle of 40° at point Y.

(iii) Mark a point X on an arm of 40° such as $m\overline{XY}=3.5\text{cm}$

(iv) Join X to Z.

(v) ΔXYZ is the required triangle.



Exercise No: 3

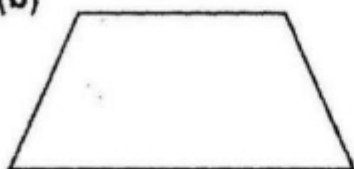
Label the following quadrilaterals and describe at least two properties of each (in terms of sides and angles)

(a)



- (i) The figure is square
- (ii) All sides of a square are equal in length.
- (iii) All angles of a square are right angles.

(b)



- (i) The figure is Trapezium
- (ii) Only two opposite sides of a Trapezium are parallel.
- (iii) Parallel sides of Trapezium are not congruent.

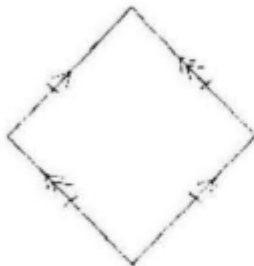
MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(c)



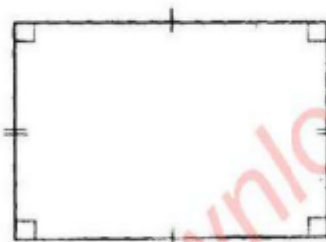
- (i) The figure is parallelogram
- (ii) Opposite sides of a parallelogram are parallel and congruent.
- (iii) Opposite angles of a parallelogram are congruent.

(d)



- (i) The figure is rhombus
- (ii) The rhombus has four equal sides .
- (iii) In rhombus, opposite angles are equal but they are not right angle.

(e)



- (i) The figure is rectangle.
- (ii) All opposite sides are congruent of a rectangle.
- (iii) All angles of a rectangle are right angles.

(f)



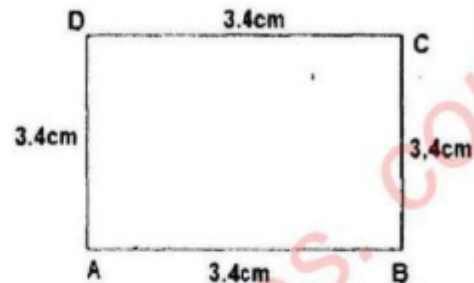
- (i) The figure is kite.
- (ii) The kite has equal pairs of adjacent sides.
- (iii) Adjacent sides of kite are equal.

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

Q2: Draw squares with to the given length, using of protector and ruler.

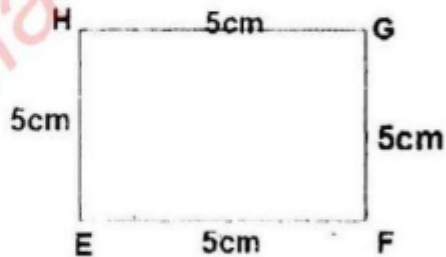
(a) 3.4 cm

- (i) Draw a line $\overline{AB} = 3.4\text{cm}$
- (ii) By using protector, draw right angles (90°) at point A and B.
- (iii) Mark points D and C such that $\overline{AD} = \overline{BC} = 3.4\text{cm}$
- (iv) Join point C to D.
- (v) ABCD is the required square.



(b) 5cm

- (i) Draw a line segment $\overline{EF} = 5\text{cm}$
- (ii) By using protector, draw right angles of point E and F.
- (iii) Mark point H and G such that $\overline{EH} = \overline{FG} = 5\text{cm}$
- (iv) Join G to H.
- (v) EFGH is the required square.



(c) 7.2 cm.

- Sol: (i) Draw a line segment $\overline{IJ} = 7.2\text{cm}$
- (ii) By using protector draw right angles of points I and J.

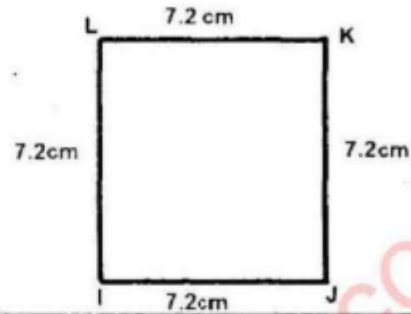
MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(iii) Mark point L and K such that

$$m \overline{IL} = m \overline{JK} = 7.2\text{cm}$$

(iv) Join K to L.

(v) IJKL is the required square.



(d) 4cm

(i) Draw a line segment $m \overline{MN} = 4\text{cm}$

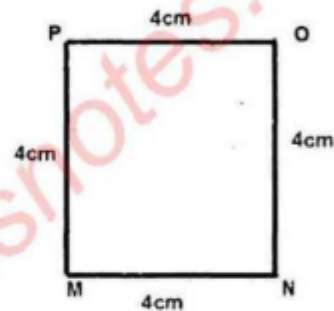
(ii) By using protector draw right angles of points M and N.

(iii) Mark point P and O such that

$$m \overline{MP} = m \overline{NO} = 4\text{cm}$$

(iv) Join O to P.

(v) MNOP is the required square.



(e) 6.3cm

(i) Draw a line segment $m \overline{QR} = 6.3\text{cm}$

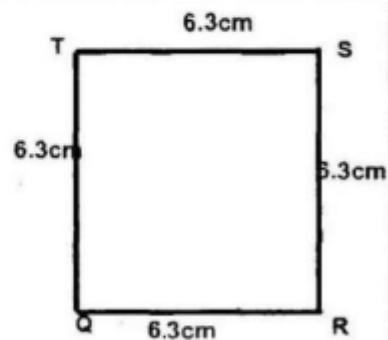
(ii) By using protector draw right angles at points Q and R.

(iii) Mark point T and S such that

$$m \overline{QT} = m \overline{RS} = 6.3\text{cm}$$

(iv) Join S to T.

(v) QRST is the required square.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(f) 5.5cm

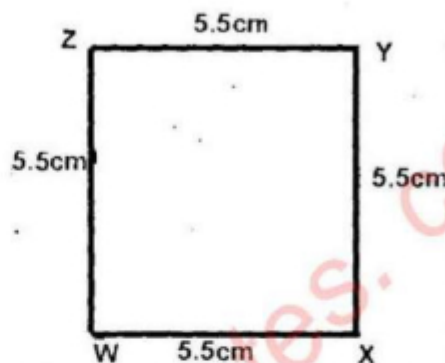
Sol: (i) Draw a line segment $\overline{WX} = 5.5\text{cm}$

(ii) By using protector draw right angles at points W and X.

(iii) Mark point Z and Y such that $m\overline{WZ} = m\overline{XY} = 5.5\text{cm}$

(iv) Join Y to Z.

(v) WXYZ is the required square.



(g) 8.9cm

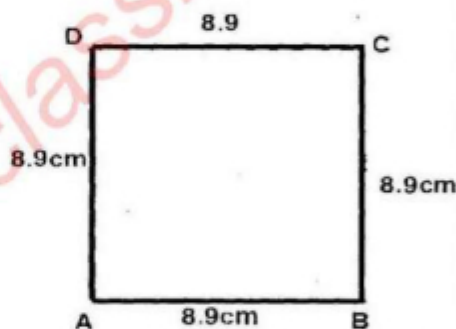
(i) Draw a line segment $m\overline{AB} = 8.9\text{cm}$

(ii) By using protector draw right angles at points A and B.

(iii) Mark points D and C such that $m\overline{AD} = m\overline{BC} = 8.9\text{cm}$

(iv) Join C to D.

(v) ABCD is the required square.



(h) 3.3cm

Sol: (i) Draw a line segment

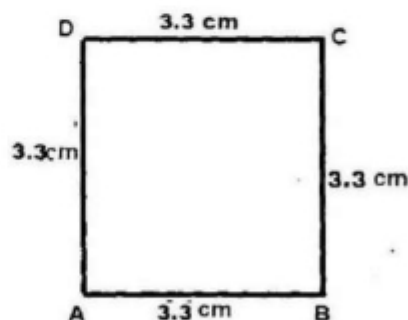
$m\overline{EF} = 3.3\text{cm}$

(ii) By using protector draw right angles at points E and F.

(iii) Mark points H and G such that $3.3\text{cm } m\overline{EH} = m\overline{FG} = 3.3\text{cm}$

(iv) Join G to H.

(v) EFGH is the required square.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

Q3: Draw a rectangle using protector and ruler with the given length and widths.

(a) 7cm, 5 cm

Sol: (i) Draw a line segment $m \overline{AB} = 7\text{cm}$

(ii) By using protector draw right angle (90°) at point A and B.

(iii) Mark point D and C on right angles as $m \overline{AD} = m \overline{BC} = 5\text{cm}$

(iv) Join C to D.

(v) ABCD is the required rectangle



(b) 8cm, 4.4cm

Sol: (i) Draw a line segment $m \overline{EF} = 8\text{cm}$

(ii) By using protector draw right angles (90°) at points E and F.

(iii) Mark point H and G on right angles such that $m \overline{EH} = m \overline{FG} = 4.4\text{cm}$

(iv) Join G to H

(v) EFGH is the required rectangle.



(c) 6.6cm, 3.4 cm

Sol: (i) Draw a line segment

$m \overline{IJ} = 6.6\text{cm}$

(ii) By using protector draw right angles at point I and J.

(iii) Mark point L and K on right

angles such that $m \overline{IL} = m \overline{JK} = 3.4\text{cm}$

(iv) Join K to L

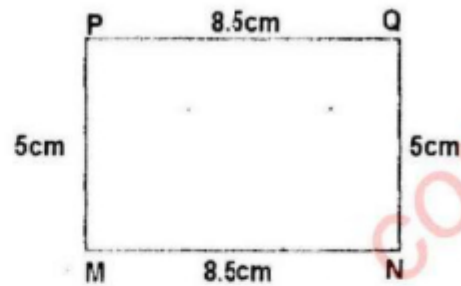
(v) IJKL is the required rectangle.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

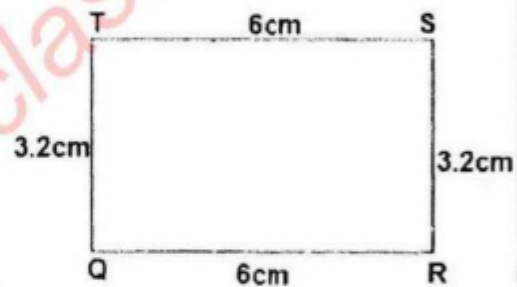
(d) 8.5cm , 5cm

- (i) Draw a line segment $\overline{MN} = 8.5 \text{ cm}$
 (ii) By using protector, draw right angles at points M and N.
 (iii) Mark point P and O on right angles such that $m\overline{MP} = m\overline{NO} = 5 \text{ cm}$
 (iv) Join O to P
 (v) MNOP is the required rectangle.



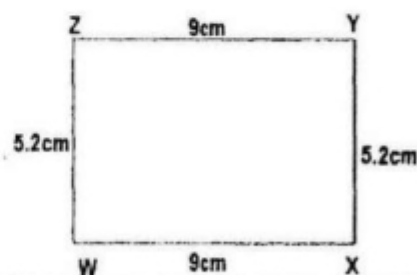
(e) 6cm. 3.2cm

- Sol: (i) Draw a line segment $\overline{QR} = 6 \text{ cm}$
 (ii) By using protector draw right angles at points Q and R
 (iii) Mark point T and S on right angle such that $m\overline{TQ} = m\overline{RS} = 3.2 \text{ cm}$
 (iv) Join S to T.
 (v) QRST is the required rectangle.



(f) 9cm , 5.2cm

- Sol: (i) Draw a line segment $\overline{WX} = 9 \text{ cm}$
 (ii) By using protector draw a right angles (90°) at point W and X.
 (iii) Mark points Z and Y on so, $m\overline{WZ} = m\overline{XY} = 5.2 \text{ cm}$
 (iv) Join Y to Z
 (v) WXYZ is the required rectangle.

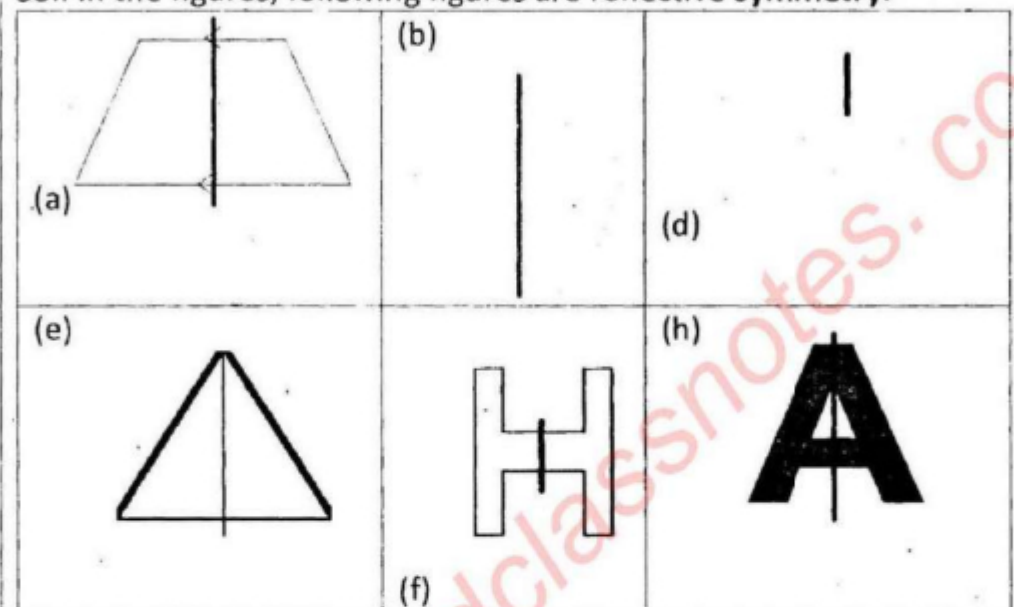


MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

Exercise No: 4

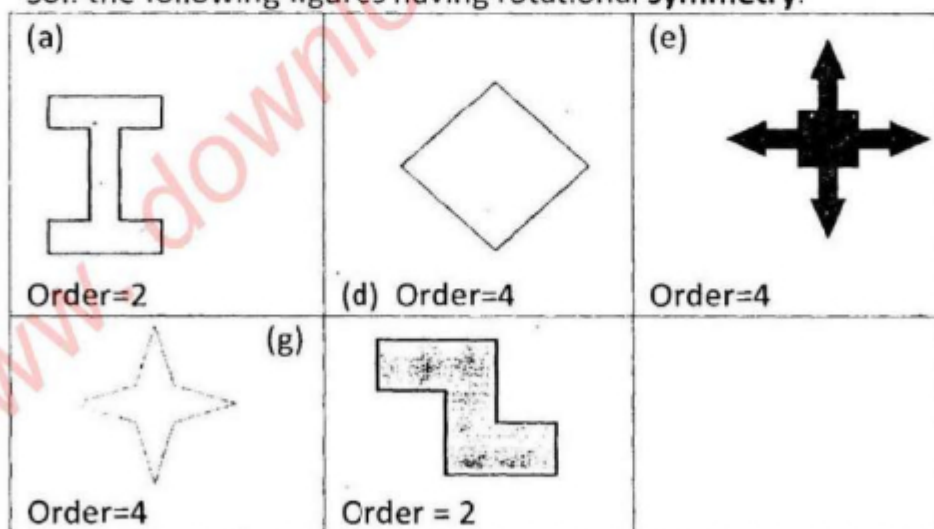
Q1: Circle the figures which have reflective symmetry. Also draw their line of symmetry.

Sol: In the figures, following figures are reflective symmetry.



Q2: Circle the figures having rotational symmetry. Also write the order of their rotation and mark their centre of rotation.

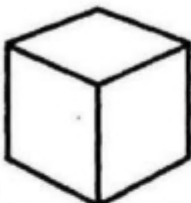
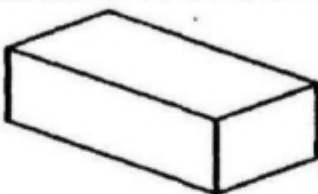
Sol: the following figures having rotational symmetry.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

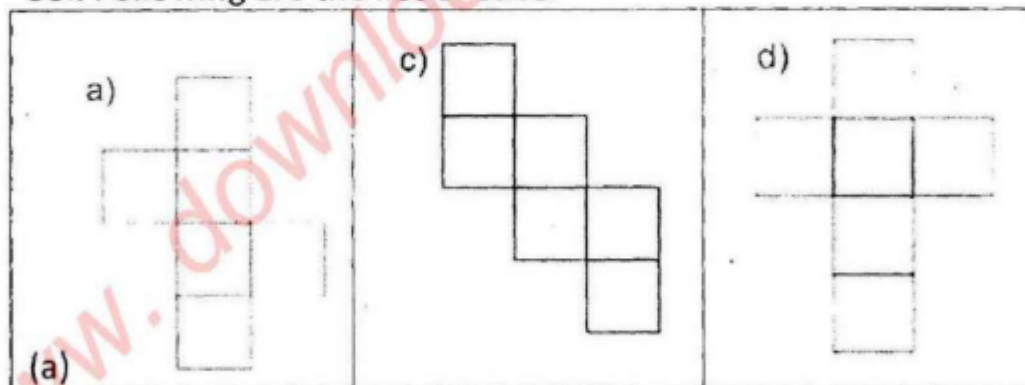
Exercise 5

Q1: Write the name of the figures. Also write the number of faces and identify the shape of the faces.

(a)		(b)		(c)	
Name of 3d shape	Cube	Pyramid	Cuboid		
Name of faces	6	5	6		
Name of faces	6 squares faces	3 triangle faces 1 square face	6 rectangle faces		

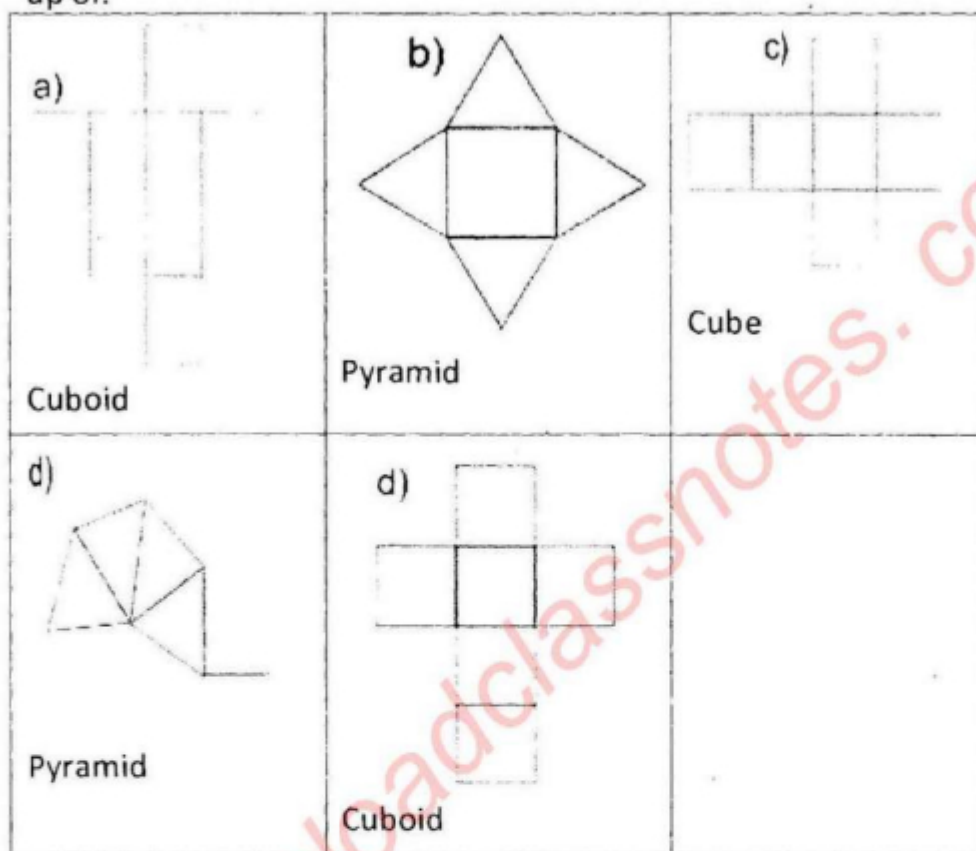
Q2: Identify the nets of cube and colour them.

Sol: Following are the net of cube.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

Q3: Observe these nets and identify the 3d solid they are made up of.



Review Exercise

(1) Choose the correct option.

(a) Which of these is a reflex angle ?

- (i) 375° (ii) 215° (iii) 180° (iv) 90°

(b) The supplement of 200° is :

- (i) 160° (ii) 40° (iii) 70° (iv) 80°

© Sum of two right angles is equal to :

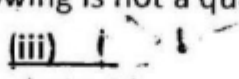
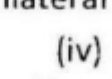
- (i) Reflex angle (ii) Straight angle (iii) Acute angle (iv) Obtuse angle

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(d) Two angles will be called supplementary angles if their sum is equal to:

- (i) 180° (ii) 90° (iii) 360° (iv) 100°

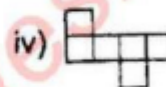
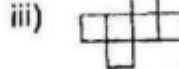
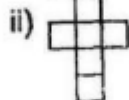
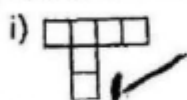
(e) Which of the following is not a quadrilateral?

- (i) $\square$ (ii) $\diamond$ (iii)  (iv) 

(f) A triangle in which their sides are equal is called an isosceles triangle.

- (i) 1 (ii) 2 (iii) 3 (iv) 4

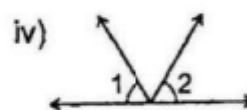
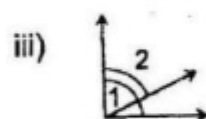
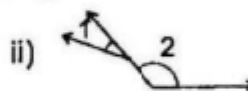
g) Which of the following is not the net of a cube?



h) The order of the rotational symmetry of the shape  is:

- i) 1 ii) 2 iii) 3 iv) 4

i) Which of the following is showing adjacent angles?



2: Draw these angles using protector and ruler.

(a) 35°

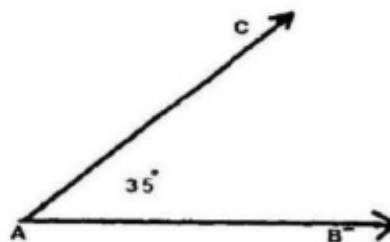
(i) draw a ray $\overrightarrow{AB}$.

(ii) Place protector on ray $\overrightarrow{AB}$ such that the center point of protector at point A and baseline is aligned with arm with arm $\overrightarrow{AB}$

(iii) Read the scale of protector and mark a point C and 35°

(iv) join A to C

(v) $\angle BAC = 35^\circ$ is required angle.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(b) 45°

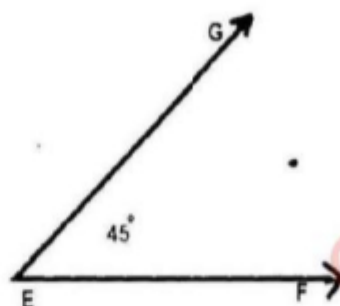
Sol: (i) Draw a ray $\overrightarrow{EF}$

(ii) Place protector on ray $\overrightarrow{EF}$ such that the centre point of protector at point E and baseline is aligned with arm $\overrightarrow{EF}$.

(iii) Read the scale on protector and mark a point G at 45°

(iv) Join G to E.

(v) $\angle FEG = 45^\circ$ is the required angle.



(c) 240° for reflex angle of 240° we have $360^\circ - 120^\circ = 240^\circ$

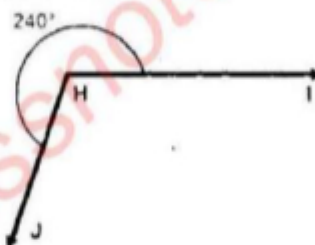
(i) Draw a ray $\overrightarrow{HI}$

(ii) Place protector on down word side of $\overrightarrow{HI}$ such that centre point of protector is on point H and baseline of protector is aligned with ray $\overrightarrow{HI}$.

(iii) Read the scale on protector and mark a point J at 120° .

(iv) Join H to J

(v) $\angle I H J = 240^\circ$ is the required reflex angle.



(d) 180°

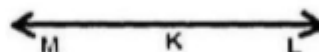
Sol: (i) Draw a ray $\overrightarrow{KL}$

(ii) Place protector on $\overrightarrow{KL}$ such that centre point of protector is on point K and baseline Aligned with ray $\overrightarrow{KL}$.

(iii) Read the scale on protector and mark a point M at 180°

(iv) Join K to M

(v) $\angle LKM = 180^\circ$ is required straight angle.



(e) 90°

Sol: (i) Draw a ray $\overrightarrow{NO}$

(ii) Place protector on $\overrightarrow{NO}$ such that centre point of protector is on point N and baseline of protector is aligned with ray $\overrightarrow{NO}$

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(b) 45°

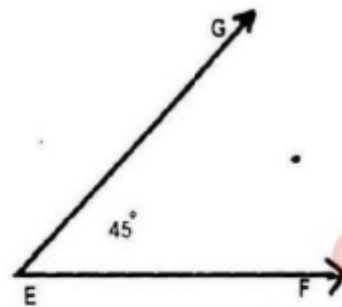
Sol: (i) Draw a ray $\overrightarrow{EF}$

(ii) Place protector on ray $\overrightarrow{EF}$ such that the centre point of protector at point E and baseline is aligned with arm $\overrightarrow{EF}$.

(iii) Read the scale on protector and mark a point G at 45°

(iv) Join G to E.

(v) $\angle FEG = 45^\circ$ is the required angle.



(c) 240° for reflex angle of 240° we have $360^\circ - 120^\circ = 240^\circ$

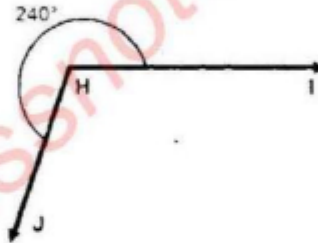
(i) Draw a ray $\overrightarrow{HI}$

(ii) Place protector on down word side of $\overrightarrow{HI}$ such that centre point of protector is on point H and baseline of protector is aligned with ray $\overrightarrow{HI}$.

(iii) Read the scale on protector and mark a point J at 120° .

(iv) Join H to J

(v) $\angle I H J = 240^\circ$ is the required reflex angle.



(d) 180°

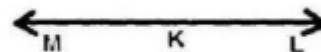
Sol: (i) Draw a ray $\overrightarrow{KL}$

(ii) Place protector on $\overrightarrow{KL}$ such that centre point of protector is on point K and baseline Aligned with ray $\overrightarrow{KL}$.

(iii) Read the scale on protector and mark a point M at 180°

(iv) Join K to M

(v) $\angle LKM = 180^\circ$ is required straight angle.

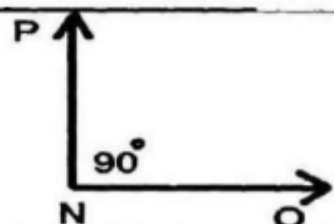
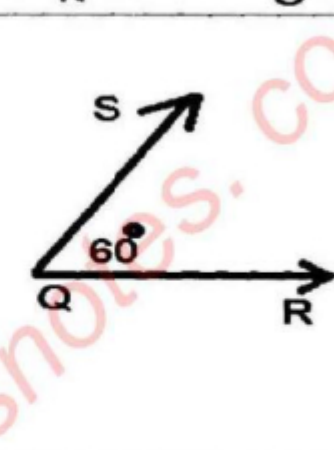
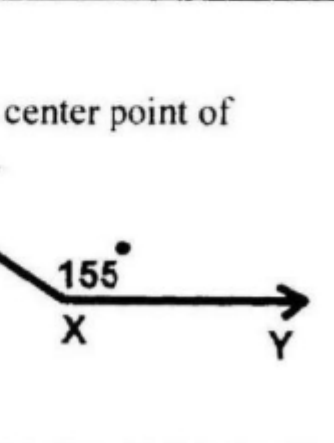


(e) 90°

Sol: (i) Draw a ray $\overrightarrow{NO}$

(ii) Place protector on $\overrightarrow{NO}$ such that centre point of protector is on point N and baseline of protector is aligned with ray $\overrightarrow{NO}$

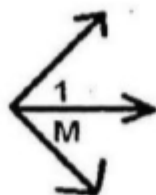
MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(iii) Read scale on protector and mark a point P at 90° (iv) Join N to P. (v) $\angle DNP = 90^\circ$ is required right angle.	
(f) 60° Sol(i) Draw a ray QR (ii) Place protector on $\overline{QR}$ such that the centre of protector is at point Q and baseline is aligned with ray QR. (iii) Read scale on protector and mark point S at 60°. (iv) Join Q to S. (v) $\angle RQS = 60^\circ$ is required angle.	
(g) 330° for reflex angle of 300° we subtract $360^\circ - 300^\circ = 60^\circ$ (i) Draw a ray ST. (ii) Place protector upside down on $\overline{ST}$ such that centre point of protector is on point S and baseline of protector is aligned with ray $\overline{ST}$. (iii) Read the scale on protector and mark a point U at 60° (iv) Join S to U (v) $\angle TSU = 300^\circ$ is the required reflex angle.	
(h) 155° Sol(i) Draw a ray XY. (ii) Place protector on ray XY such that the center point of protector on point X and Z and baseline of protector is aligned with ray XY. (iii) Read scale on protector and mark a point Z at 155° (iv) Join X to Z. (v) $\angle YXZ = 155^\circ$ is required angle.	

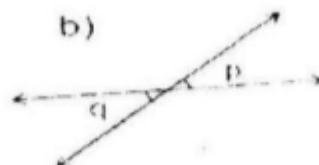
MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(3) Identify the adjacent angles.

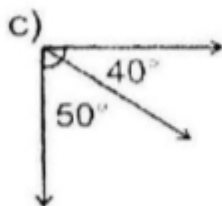
(a)



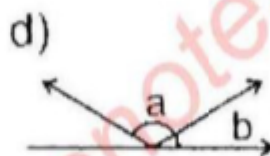
$\angle 1$ and $\angle m$ are adjacent angles.



$\angle p$ and $\angle q$ are not adjacent angles



$\angle 40^\circ$ and $\angle 50^\circ$ are adjacent angles.



$\angle a$ and $\angle b$ are adjacent angles

Q4: Make 5 pairs of each complementary and supplementary angles.

Complementary Angles	Supplementary
(a) $10^\circ + 80^\circ = 90^\circ$	(f) $50^\circ + 130^\circ = 180^\circ$
(b) $20^\circ + 70^\circ = 90^\circ$	(g) $60^\circ + 120^\circ = 180^\circ$
(c) $30^\circ + 60^\circ = 90^\circ$	(h) $80^\circ + 100^\circ = 180^\circ$
(d) $40^\circ + 50^\circ = 90^\circ$	(i) $90^\circ + 90^\circ = 180^\circ$
(e) $05^\circ + 85^\circ = 90^\circ$	(j) $20^\circ + 160^\circ = 180^\circ$

5: How many types of triangles are there with respect to their sides and angles?

A: There are six types of triangles; in which three types belong with respect to the sides of triangle which are:

(i) equilateral triangle, (ii) Isosceles triangle and (iii) scalene triangle

and three types are with respect to angles of triangles which are

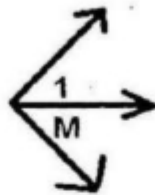
(i) acute angled triangle, (ii) right angled triangle and

(iii) obtuse angled triangle.

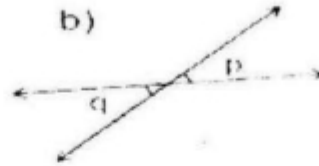
MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

(3) Identify the adjacent angles.

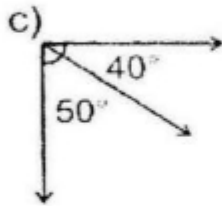
(a)



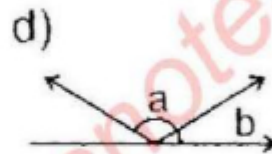
$\angle 1$ and $\angle m$ are adjacent angles.



$\angle p$ and $\angle q$ are not adjacent angles



$\angle 40^\circ$ and $\angle 50^\circ$ are adjacent angles. $\angle a$ and $\angle b$ are adjacent angles



Q4: Make 5 pairs of each complementary and supplementary angles.

Complementary Angles	Supplementary
(a) $10^\circ + 80^\circ = 90^\circ$	(f) $50^\circ + 130^\circ = 180^\circ$
(b) $20^\circ + 70^\circ = 90^\circ$	(g) $60^\circ + 120^\circ = 180^\circ$
(c) $30^\circ + 60^\circ = 90^\circ$	(h) $80^\circ + 100^\circ = 180^\circ$
(d) $40^\circ + 50^\circ = 90^\circ$	(i) $90^\circ + 90^\circ = 180^\circ$
(e) $05^\circ + 85^\circ = 90^\circ$	(j) $20^\circ + 160^\circ = 180^\circ$

5: How many types of triangles are there with respect to their sides and angles?

A: There are six types of triangles; in which three types belong with respect to the sides of triangle which are:

(i) equilateral triangle, (ii) Isosceles triangle and (iii) scalene triangle

and three types are with respect to angles of triangles which are

(i) acute angled triangle, (ii) right angled triangle and (iii) obtuse angled triangle.

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

Q6: Draw a triangle IJK in which $m\angle I = 70^\circ$, $IJ = 6.8$ and $m\angle J = 28^\circ$

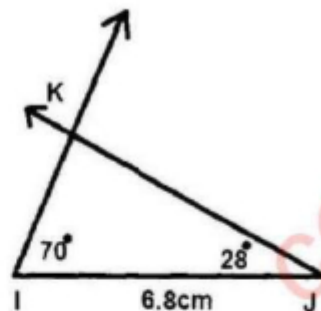
Sol: (i) Draw a line segment $IJ = 6.8\text{cm}$

(ii) By using protector draw an angle of 70° at point I.

(iii) Similarly draw an angle of 28° at point J.

(iv) The two rays intersect each other at point K.

(v) IJK is the required triangle.



Q7: Draw a triangle PQR in which, $QR = 3.3\text{cm}$, $PQ = 5.2\text{cm}$ and $m\angle Q = 75^\circ$

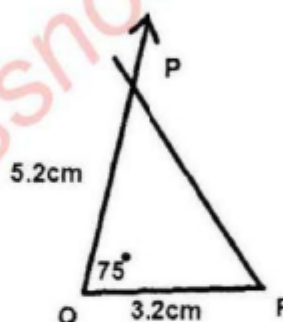
Sol: (i) Draw a line segment $QR = 3.3\text{cm}$

(ii) Using protector draw an angle of 75° at point Q.

(iii) Mark a point P on arm of 75° such as $m\overline{QP} = 5.2\text{cm}$

(iv) Join P to R.

(v) PQR is the required triangle.



Q8: Draw squares according to the given lengths with the help of protector and ruler.

(a) 4cm

Sol: (i) Draw a line segment

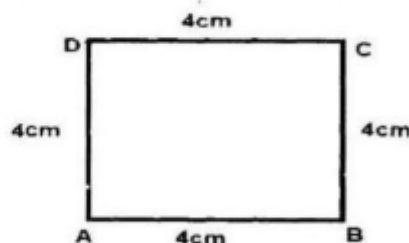
$\overline{AB} = 4\text{cm}$

(ii) By using protector draw right angles at points A and B.

(iii) Mark points D and C such that $m\overline{AD} = m\overline{BC} = 4\text{cm}$

(iv) Join C to D.

(v) ABCD is required square.

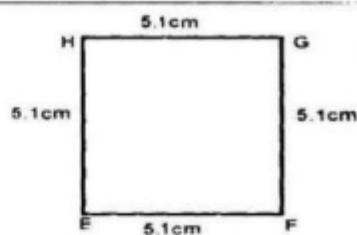


(b) 5.1cm

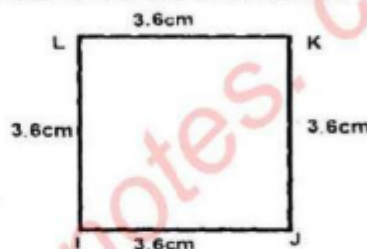
Sol: (i) Draw a line segment $\overline{EF} = 5.1\text{cm}$

MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

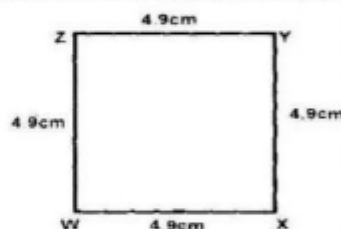
- (ii) By using protector draw right angles at points E and F.
 (iii) Mark points H and G such that $m\overline{EH} = m\overline{FG} = 5.1\text{cm}$
 (iv) Join G to H.
 (v) EFGH is required square.



- (c) 3.6 cm
 Sol(i) Draw a line segment $\overline{IJ} = 3.6\text{m}$
 (ii) By using protector draw right angles at points I and J.
 (iii) Mark points L and K such that $m\overline{IL} = m\overline{KJ} = 3.6\text{cm}$
 (iv) Join K to L.
 (v) IJKL is required square.



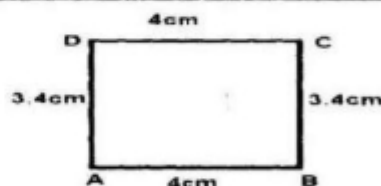
- (d) 4.9 cm
 Sol(i): Draw a line segment $\overline{WX} = 4.9\text{cm}$
 (ii) By using protector draw right angles at points W and X.
 (iii) Mark point Z and Y at right angles such that $m\overline{WZ} = m\overline{XY} = 4.9\text{cm}$
 (iv) Join Y to Z
 (v) WXYZ is required square.



Q9: Draw rectangle with the help of protector and ruler according to the given lengths and widths.

(a) L=4cm, W=3.4cm

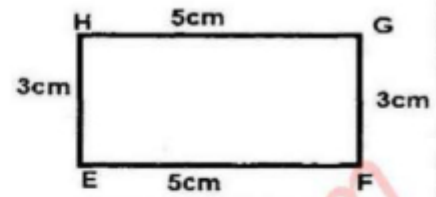
- Sol(i) Draw a line segment $\overline{AB} = 4\text{cm}$
 (ii) By using protector draw right angles at points A and B.
 (iii) Mark points D and C on right such that $m\overline{AD} = m\overline{BC} = 3.4\text{cm}$
 (iv) Join C to D.
 (v) ABCD is required rectangle.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

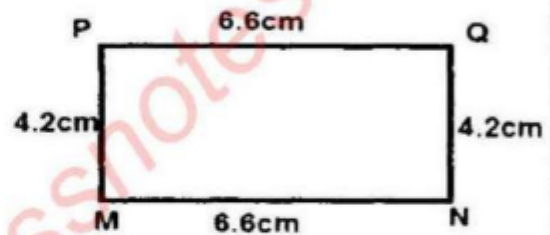
(b) L= 5cm, W= 3cm

- Sol!(i) Draw a line segment $\overline{EF} = 5cm$
 (ii) By using protector draw right angles at points E and F.
 (iii) Mark points H and G on right such that $\overline{EH} = \overline{FG} = 3cm$
 (iv) Join G to H.
 (v) EFGH is the required rectangle.



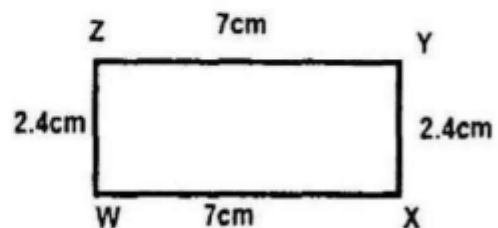
(c) L=6.6cm , W 4.2cm

- Sol(i) Draw a line segment $\overline{MN} = 6.6cm$
 (ii) By using protector draw right angles at points M and N.
 (iii) Mark points P and Q and O on right such that $\overline{MP} = \overline{NO} = 4.2cm$
 (iv) Join O to P.
 (v) MNOP is the required rectangle.



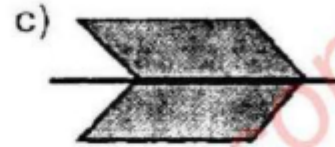
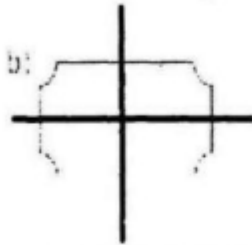
(d) L = 7cm , W= 2.4 cm

- Sol(i) Draw a line segment $\overline{WX} = 7cm$
 (ii) By using protector draw right angles at points W and X.
 (iii) Mark points Z and Y on right such that $\overline{WZ} = \overline{XY} = 2.4cm$
 (iv) Join Y to Z.
 (v) WXYZ is the required rectangle.



MATHEMATICS NOTES FOR 5TH CLASS (FOR KHYBER PAKHTUNKHWA)

Q10: Circle the figures which have reflective symmetry also draw their line of symmetry.



Q11: Circle the figures having rotational symmetry. Also write the order of their rotation and mark their centre of rotation.

