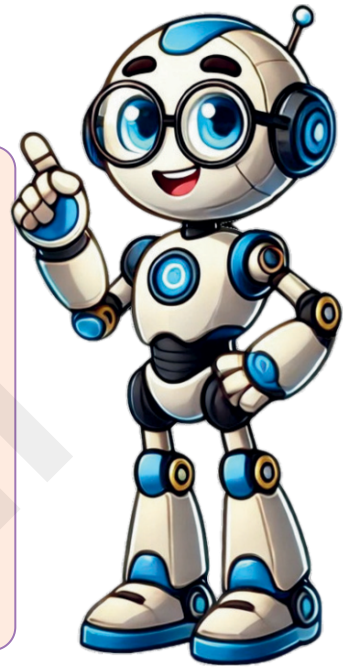
7 Geometry



EeeBee

We'll cover the following key points:

→ Basic Concepts of Geometry

→ Angles

→ Measuring an Angle

→ Classification of Angles

→ Drawing an Angle

→ Triangles

→ Circle

→ Interior and Exterior of a Closed Curve

Still curious? Talk to me by scanning the QR code.

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Learning Outcomes

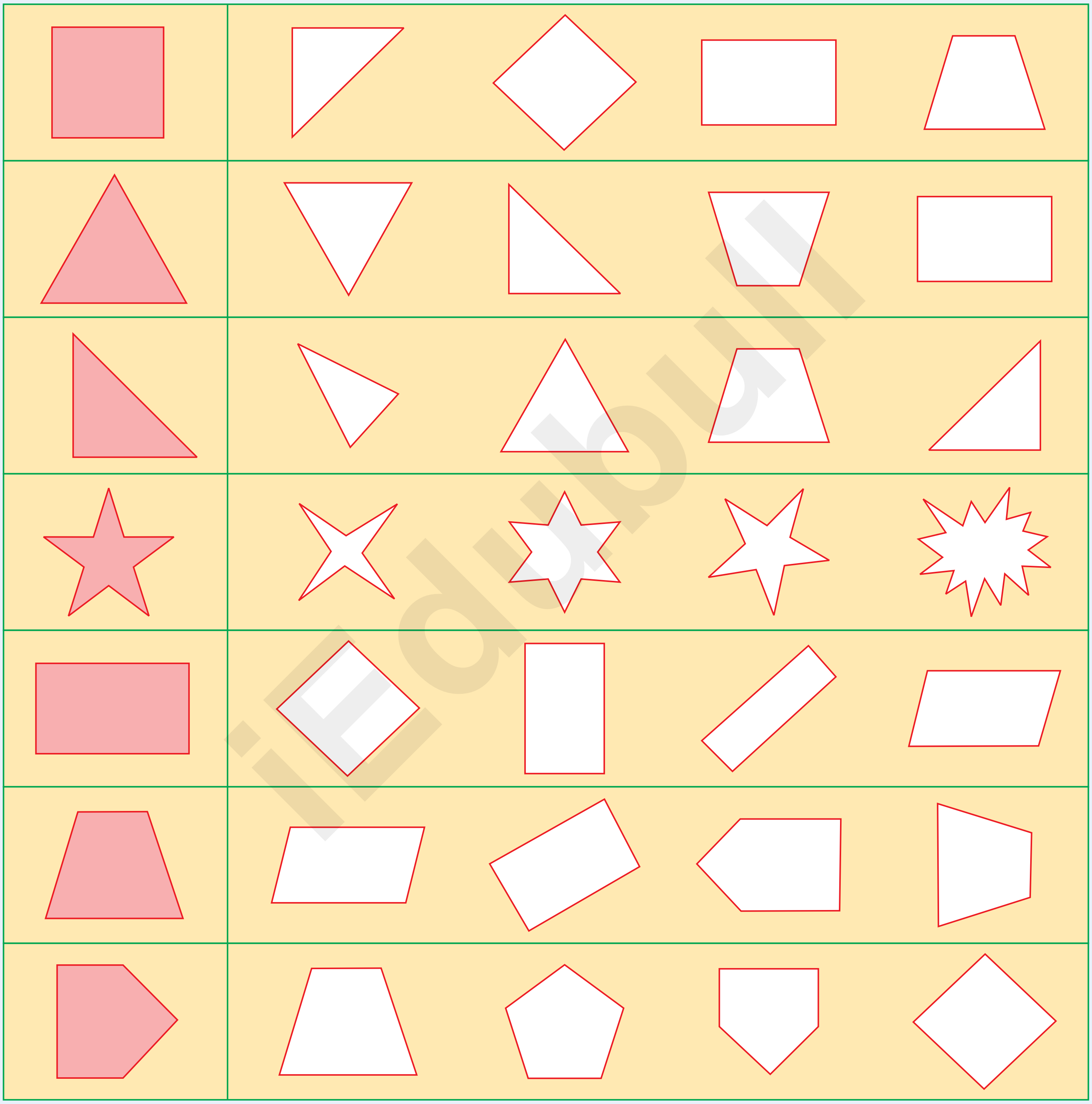
By the end of this chapter, students will be able to:

- Identify and classify different types of lines (straight, curved, horizontal, vertical, and diagonal).
- Recognize and differentiate between open and closed figures.
- Understand and identify different types of angles (acute, obtuse, right, and straight angles).
- Identify and name basic 2D shapes (circle, square, rectangle, triangle, etc.) and their properties (sides, vertices, and angles).
- Understand the concept of symmetry and identify symmetrical figures.
- Identify and draw perpendicular and parallel lines.
- Understand the concept of perimeter and calculate the perimeter of simple 2D shapes.

Warm Up

Experiential Learning

Shade the shape that is the same as the first shape in each row.



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Basic Concepts of Geometry

Point and line are the building blocks of geometry. These two concepts form the basis of geometrical concepts and theories. Let us start with point.

Point

A circle of zero radius is known as point.

Point is simply a dot (.) marked with a sharp pencil, represents a point. A point has no length, no breadth or no height (i.e thickness). Capital letters of the English alphabet are used to show different points represented by dots.

For example: A, B and C are points.

A• •B •C

Line Segment

If we join two points P and Q with the help of a scale, we get a figure as shown below :

This is **line segment PQ**. The points 'P' and 'Q' are its end-points. It has a definite length.

Line segment 'PQ' is written as $\overline{PQ}$.

Ray

If we extend the line segment PQ in one direction without end-point and mark it by an arrow towards Q, we get a figure as show below:

This is ray PQ. P is its end-point. It is also called '**initial point**'. Since, a ray has only one end-point, we cannot measure its length.

The 'ray PQ' is written as $\overrightarrow{PQ}$.

REMEMBER

The overhead arrow of PQ is pointing towards Q. In case of the ray QP (or QP), the overhead arrow is pointing towards.

Line

If we extend the line segment PQ (or QP) in both directions without end-points and mark it by arrows on both sides, we get a figure as shows below.

This is **line** PQ. It is written as $\overleftrightarrow{PQ}$

Since a line does not have any end-point, we cannot measure its length. Thus we can say that the length of any line is indefinite.

line l

A line is named by two points on the line such as '**line AB**', or by using single small letter such as 'l'.

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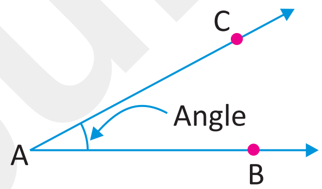
Relationship between Line Segment, a Ray and a Line

S.No.	A line segment	A ray	A line
1.	A line segment has a definite length.	A ray does not have a definite length.	A line does not have a definite length.
2.	It has two end-points.	It has only one end-point.	It has no end-point.
3.	We can draw a line segment on a paper.	We can only represent a ray by a diagram.	We can only represent a line by a diagram.
4.	$\overline{PQ}$ represents a line segment PQ.	$\overrightarrow{PQ}$ represents a ray PQ.	$\overleftrightarrow{PQ}$ represents a line PQ.

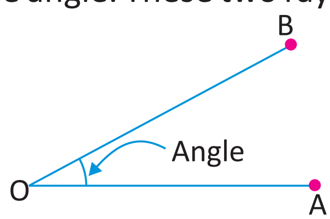
Angles

Mark a point A. Draw a ray AB. Draw another ray AC starting from the same point towards a different direction.



This figure is made up of two rays AB and AC. These rays have the same initial point. This figure represents an angle. The common end-point A is known as the vertex of the angle. These two rays are called the arms or sides of the angle.

Two line segments with a common end-point also form an angle. In the following figure, the two line segments OA and OB having the common end-point O form an angle.

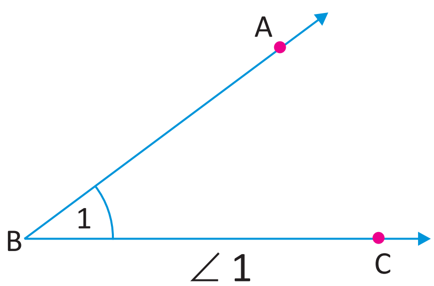


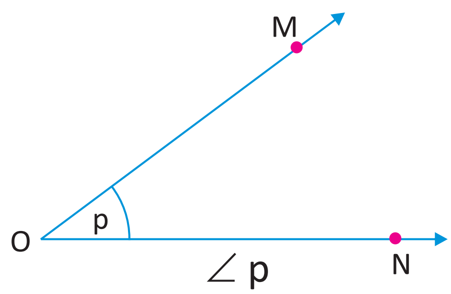
We use capital letters of English alphabet to name an angle. While naming or writting an angle, the vertex is put in the middle. Thus, the angle draw above is named as

'angle BOA' or 'angle AOB'

We use the symbol '∠' to denote the word 'angle'. So, using the symbol '∠' the angle BOA is written as ∠BOA.

Sometimes, we name an angle by writing a number or a small letter inside the angle near its vertex. In the following figure, two angles have been named as ∠1 and ∠p.





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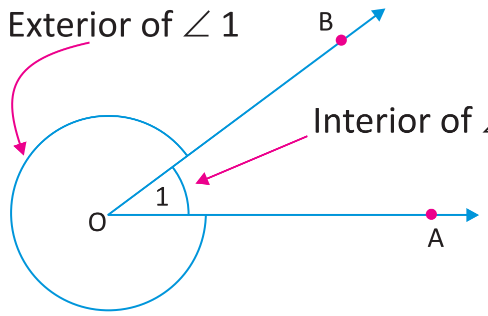
Interior and Exterior of an Angle

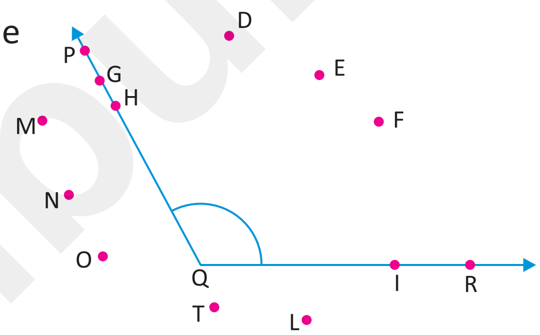
We know that whenever two rays or two line segments meet at a common end-point, an angle (say ∠1) is formed. Also, the two portions of this angle are formed during the process.

These are :

(i) Interior of the angle ∠1 (ii) Exterior of the angle ∠1



Example 1: Look at the figure given and name the points that are



(i) in the interior of the angle.

(ii) in the exterior of the angle.

(iii) on the angle.

Solution: (i) The points in the interior of the ∠PQR are D, E and F.

(ii) The points in the exterior of the angle ∠PQR are M, N, O, T and L.

(iii) The points on the boundary of the angle are P, G, H, Q, I and R.

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Exercise 7.1

Knowledge Application

1. State True or False:

(a) A line segment does not have a definite length. ☐

(b) A ray has a definite length. ☐

(c) A line does not have a definite length. ☐

(d) An angle has two arms and one vertex. ☐

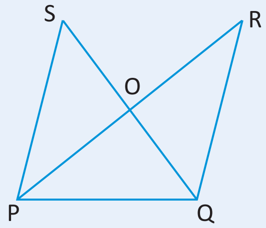
(e) A line has two end-points. ☐

(f) A ray has two end-points. ☐

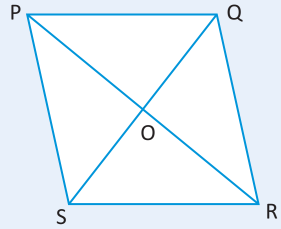
(g) A line segment has two end-points. ☐

2. **Look at the following figures and name as many line segments as you can :**

(a)



(b)

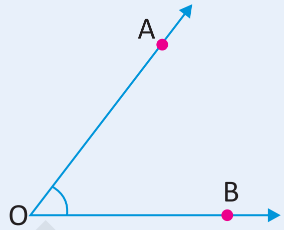


3. **Look at the given figure and write the**

(a) names of the arms of the angle.

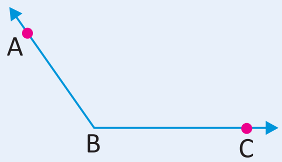
(b) name of the vertex of the angle.

(c) the name of this angle in three different ways

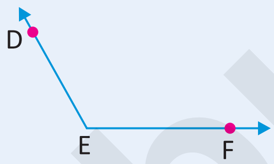


4. **Write the vertex and arms for each of the following angles :**

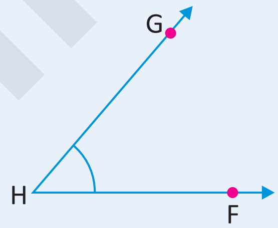
(a)



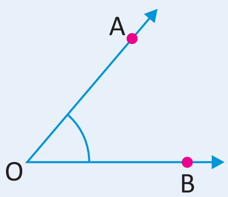
(b)



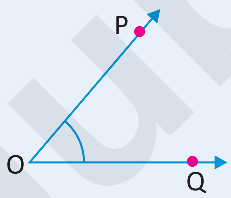
(c)



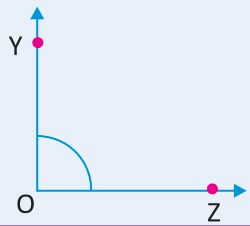
(d)



(e)



(f)



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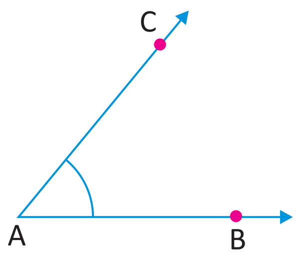
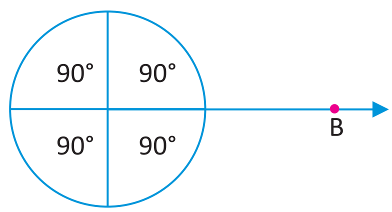
Measuring an Angle

The size of an angle depends upon the opening between its arms. It does not depend on the length of the arms.



Let a ray AB moves about its end-point A starting from position AB and reaches AC as shown here. AB is the initial position and AC is the final position. We can say that ∠CAB is formed about point A by rotating AB.



The rotation may be clockwise or anti-clockwise. If one complete rotation is made (as shown in the following figure), it is divided into 360 equal parts. Each part is equal to one degree. Angles are measured in terms of **degress**. The symbol used for a degree is '°' which is inserted on the right top of the numeral representing the amount of opening of an angle.

For example, 60 degrees can be written as 60°. The word 'degree' has come from the Latin Word '**gradus**', meaning 'step'. It refers to a stage in an ascending or descending scale.

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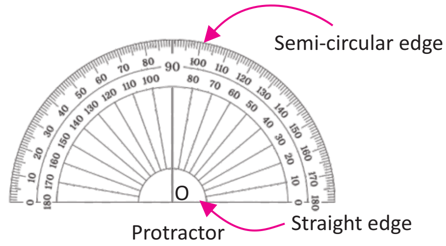
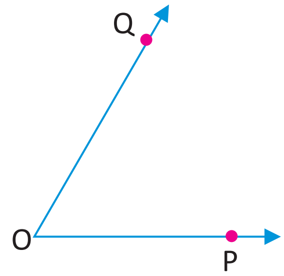
Protractor is used to measure an angle. It is a geometrical instrument which has two edges-one semi-circular edge and the other straight edge. The semi-circular edge is graduated from 0 to 180 degrees clockwise as well as anti-clockwise.



The straight edge of a protractor is called its base-line or zero-line. The base-line joins 0 and 180 marks. The mid-point of the base-line is called center of the protractor (say, a point O).

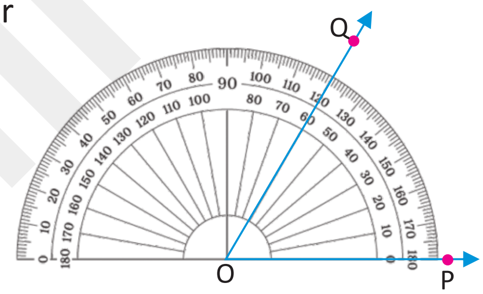
Example 2 : Measure the angle given in the following figure using a protractor.



Solution : To measure the angle POQ, we follow the steps given below:

Step 1: Place the centre of the base-line of a protractor on point O (the vertex of the angle).

Step 2 : Adjust the protractor so that the base-line falls along OP.



Step 3 : Read the scale at the point where the other arm OQ of the angle crosses the scale on the protractor.

Here, arm OQ falls on the 60 degree mark of the protractor.

Thus, we can say the measure of the angle POQ is 60, i.e. $\angle POQ = 60°$.

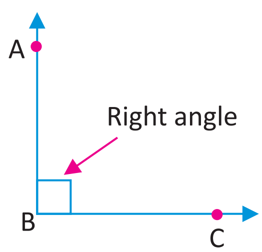
Classification of Angles

According to the measures of angles, we can classify angles.

The angles having degree measures as 0° and 180° are called '**zero-angle**' and '**straight-angle**' respectively.

Right Angle

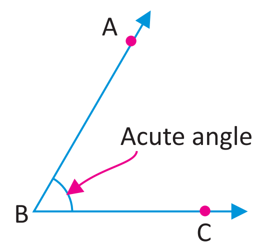
An angle measuring 90° is called a right angle. In the adjoining figure, we have



$$\angle ABC = 90°$$
or
$\angle ABC$ is a right angle.

Acute Angle

An angle measuring between 0° and 90° is called an acute angle. In the adjoining figure, $\angle ABC$ is an acute angle.



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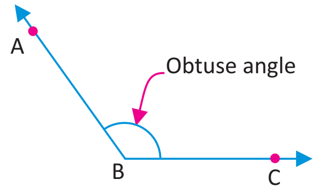
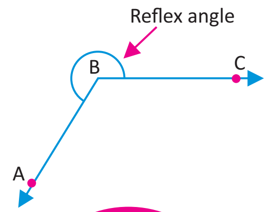
Obtuse Angle

An angle measuring greater than 90° and less than 180° is called an obtuse angle. In the adjoining figure, ∠ABC is an obtuse angle.



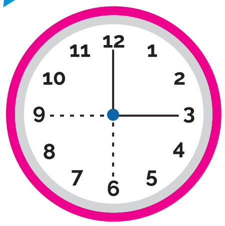
Reflex Angle

An angle measuring more than 180° but less than 360° is called a reflex angle. In the adjoining figure, ∠ABC is a reflex angle.



Angles formed by the two hands of a clock

A clock face is divided into 12 equal parts. Since 360 ÷ 12 = 30, each part is equal to 30°.



If the hand of a clock moves from 12 to 3, then it has moved through 3 angles of 30° each, that is 90°.

Exercise 7.2

Knowledge Application

1. Multiple Choice Questions (MCQs)

Choose the correct option.

(a) An angle measuring 90° is called a/an

(i) Right angle ☐ (ii) Acute angle ☐ (iii) Obtuse angle ☐

(b) The angles having degree measures as 0° and 180° are called

(i) Zero angle ☐ (ii) Straight angle ☐ (iii) Both of these ☐

(c) An angle measuring more than 180° but less than 360° is

(i) Zero angle ☐ (ii) Straight angle ☐ (iii) None of these ☐

2. Fill in the blanks :

(a) An angle of 90° is called a ______________________ .

(b) An angle measuring more than 90° but less than 180° is called an ______________________ .

(c) An acute angle is always ______________________ 90° .

(d) A straight angle measures ______________________ .

(e) A reflex angle is always ____________ 180° , but ____________ .

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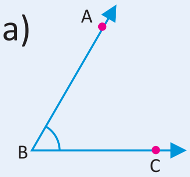
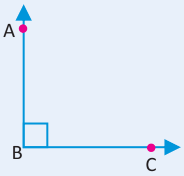
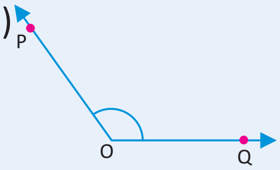
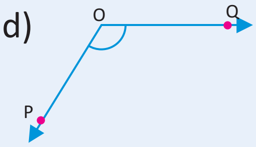
3. Using a protractor, find the measure of the following angles:

Write whether the angle is acute, obtuse or right.

(a) 

(b) 

(c) 

(d) 

4. Using protractor, construct angles having the following measures:

(a) 75°	(b) 50°	(c) 120°	(d) 90°	(e) 110°
(f) 160°	(g) 80°	(h) 40°	(i) 99°	(j) 150°

Drawing an Angle

We can draw an angle with the help of a protractor. To draw an angle of 60° with the help of a protractor, we follow the steps given below :

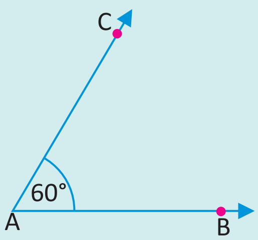
Working Rules

Step 1 : Draw a ray AB, with its end-point at A.

Step 2 : Place the centre of the protractor on point A and adjust the zero-line of the protractor such that it lies along ray AB.

Step 3: Press the protractor firmly and mark a point C corresponding to the mark 60° counting from zero on the scale of the protractor.

Step 4 : Remove the protractor and draw a ray AC. The angle BAC thus formed is the required angle whose measure is 60°.



Take a Task

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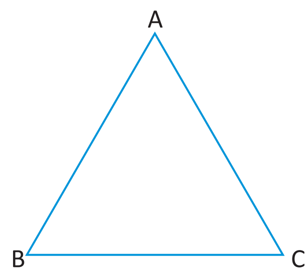
Triangles

A triangle is a closed figure formed by three line segments. In the following figure, three line segments AB, BC and CA form a triangle ABC.



These line segments (AB, BC and CA) are called its sides. The points A, B and C are called the vertices of the triangle. We name this triangle as 'triangle ABC'.

Generally, the symbol 'Δ' is used in place of word 'triangle'. Thus, the 'triangle ABC' is written as ΔABC.

The angles made by the sides of a triangle are called its **angles**. Here, the angles of ΔABC are $\angle ABC$, $\angle BCA$ and $\angle BAC$.

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REMEMBER

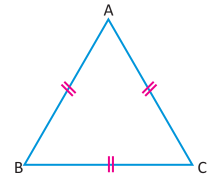
1. A triangle is made of three line segments.
2. We can draw a triangle only when the three points (vertices) are in the same plane but not on the same line.

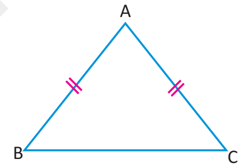
Classification of Triangles

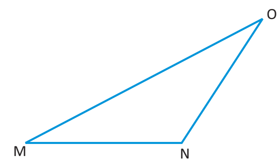
We classify a triangle in two ways :

(i) According to its sides (ii) According to its angles

According to Sides

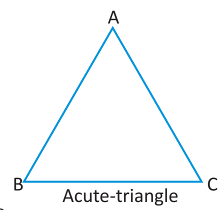


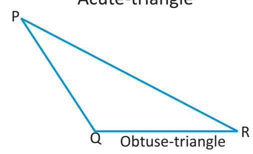


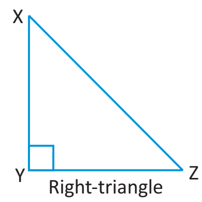


1. If all the sides of a triangle are of equal lengths, it is called an equilateral triangle. In the adjoining figure, ΔABC is an equilateral triangle, because $AB = BC = CA$.
2. A triangle with two equal sides is called an isosceles triangle. In the adjoining figure, ΔABC is an isosceles triangle, because two of its sides are equal, that is $AB = AC$.
3. A triangle with all unequals sides is called scalene triangle. In the adjoining figure, ΔMNO is a scalene triangle, because $MN \neq NO \neq OM$. ($\neq$ means 'not equal to')

According to Angles



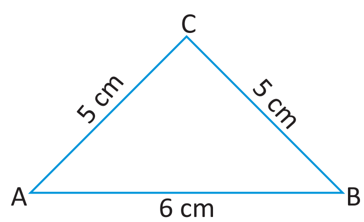




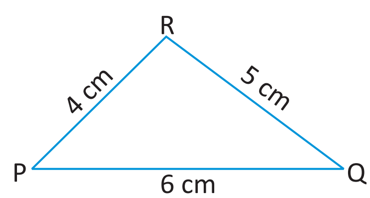
1. A triangle having all the angles acute is called an **acute-triangle**. In the adjoining figure, $\angle A$, $\angle B$ and $\angle C$ are acute angles. Therefore, ΔABC is an acute-triangle.
2. A triangle having one of its angles obtuse is called an **obtuse-triangle**. In the adjoining figure, $\angle P$ and $\angle R$ are acute angles, but $\angle Q$ is an obtuse angle. Therefore, ΔPQR is an obtuse-triangle.
3. A triangle having one of its angles as right angle is called a right-triangle. In the adjoining figure, $\angle X$ and $\angle Z$ are actue, but $\angle Y$ is a right angle. So, ΔXYZ is called **right-triangle**.

Example 3 : Which of the following triangles are 'equilateral'.' isosceles' and 'scalene' triangles ?

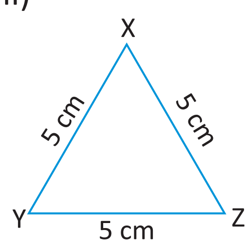
(i)



(ii)



(iii)



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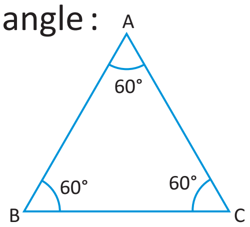
Solution : (i) AB = 6 cm, BC = 5 cm, AC = 5 cm — Two of the sides of Δ ABC are equal in lengths, that is BC = 4cm = AC. So, Δ ABC is an **isosceles-triangle**.

(ii) PQ = 6 cm, QR = 5 cm, PR = 4 cm — All the sides of Δ PQR are of different lengths. So, Δ PQR is a **scalene-triangle**.

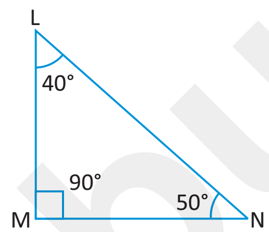
(iii) XY = 5 cm, YZ = 5 cm, XZ = 5 cm — All sides of Δ XYZ are equal, i.e. XY = YZ = ZX = 5 cm. So, Δ XYZ is an **equilateral-triangle**.

Example 4: Classify the following triangles into acute-triangle, obtuse-triangle and right-triangle :

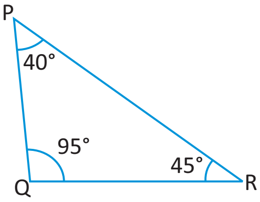
(i)



(ii)



(iii)



Solution : (I) $\angle A = 60°$, $\angle B = 60°$, $\angle C = 60°$ — In Δ ABC, all the angles are acute. So, Δ ABC is an **acute-triangle**.

(ii) $\angle L = 40°$, $\angle M = 90°$, $\angle N = 50°$ — One of the angles of Δ LMN is 90°, i.e. $\angle M = 90°$. So, Δ LMN is a **right-triangle**.

(iii) $\angle P = 40°$, $\angle Q = 95°$, $\angle R = 45°$ — One of the angles of Δ PQR is 95°, i.e. $\angle Q = 95°$. So, Δ PQR is an **obtuse-triangle**.

Exercise 7.3

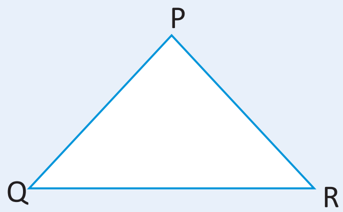
Knowledge Application

1. Look at the adjoining figure and answer the following questions :

(a) Name the sides of Δ PQR.

(b) Name the vertices of Δ PQR.

(c) Name the angles of Δ PQR.



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2. Classify the following triangles into equilateral, isosceles, scalene triangles :

(a) In Δ ABC, AB = 2cm, BC = 3 cm, CA = 4 cm

(b) In Δ ABC, AB = 5 cm, BC = 4.5 cm, CA = 4.5 cm

(c) In Δ ABC, AB = 6.4 cm, BC = 6.4 cm, CA = 6.4 cm

(d) In Δ ABC, AB = 3.5 cm, BC = 3.5 cm, CA = 3 cm

(e) In Δ ABC, AB = 5.5 cm, BC = 3.8 cm, CA = 6 cm

3. Classify following triangle into acute, obtuse, right triangles :

(a) In Δ ABC, $\angle A = 10°$, $\angle B = 70°$, $\angle C = 100°$

(b) In Δ ABC, $\angle A = 60°$, $\angle B = 60°$, <C = 60°

(c) In Δ ABC, $\angle A = 25°$, $\angle B = 50°$, $\angle C = 105°$

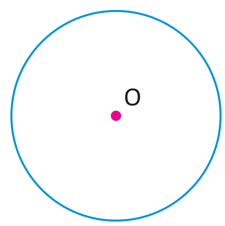
(d) In Δ ABC, $\angle A = 90°$, $\angle B = 60°$, $\angle C = 30°$

(e) In Δ ABC, $\angle A = 40°$, $\angle B = 41°$, $\angle C = 99°$

Take a Task Watch Remedial

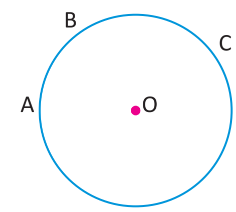
Circle

In our day-to-day life, we see many circular objects like wheels of bicycles, buses, scooters. All these are circular in shape.



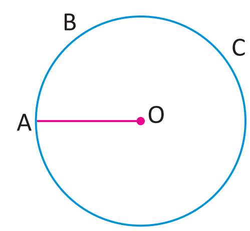
A circle is a simple closed curve whose each point is equidistant from a fixed point in it. This fixed point is called the centre of the circle. O is the centre of the circle in the adjoining figure.

How to name a circle?



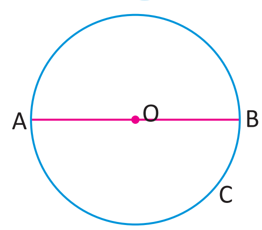
The symbol for circle is ⊙. A circle is usually named by any three points on it. The circle in the adjoining figure is named as ⊙ ABC with centre O.

Radius of a circle?



The distance between the centre of a circle and a point on the circumference is called its radius. OA is a radius of circle ABC.

Diameter of a Circle



A line segment which contains the Centre of the circle and whose end-points lie on the circumference of a circle is called diameter of the circle. AB is a diameter of circle ABC and OA is its radius.

Measure radius OA and diameter AB.

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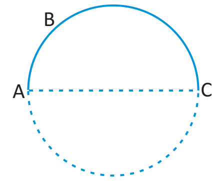
We find that AB= 2OA or radius $= \frac{1}{2}$ diameter.

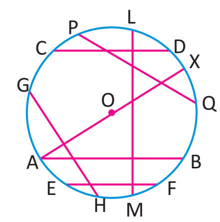
Semi-circle

Half of a circle is called a semi-circle. Thus in the figure, ABC is a semi-circle.



Chord

A line segment whose end-points lie on the circumference of a circle is called a chord.

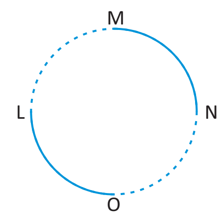


In the adjoining fig, AB, CD, EF, GH, LM, PQ and AX are chords of a circle ABC with centre O.

In fact, a diameter of a circle is its greatest chord.

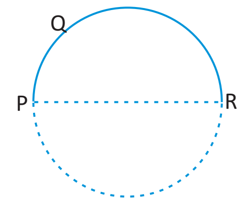
Arc and Semi-circle

A part of the boundary of a circle is called an **arc**. In the adjoining figure, arcs MN and OL are marked.



An arc AB is written as AB.

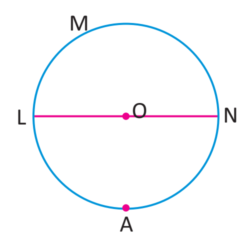
The boundary of a circle can be divided into many parts. Every part represents an arc. Half of the circle is called a semi-circle. A semi-circle is also an arc. In the adjoining figure, PQR is a semi-circle.



Circumference

The measure of the closed curve forming a circle is called its **circumference**.

To measure the circumference of a circle LMN, take a piece of thread and mark a point A on the circle. Fix the thread at A and spread it along the curve. When you reach again at point A, cut the thread. Now, measure the length of the thread using ruler. The length of the thread is equal to the circumference of the circle LMN.



Draw a diameter LN and measure it. On comparing this diameter with circumference, we get a relation given by

$$\frac{\text{Circumference}}{\text{Diameter}} = 3.14 = \pi \qquad \text{(Putting } 3.14=\pi\text{)}$$

We know that diameter = 2 × radius.

Therefore, $\boxed{\text{circumference} = 2\pi \times \text{radius}}$, where $\pi = 3.14$ or $\frac{22}{7}$.

Example 5 : Draw a circle of radius 4 cm.

Solution : Take a ruler and place the sharp-end of the compass at

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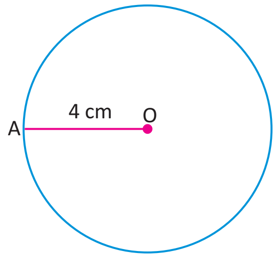
0-mark of the ruler (or scale). Now adjust the arms (by opening or closing) so that the pencil tip falls on the 4 cm mark. If 0-mark is not available or otherwise, we open the arms of the compass by 4 cm.



Now, we mark the centre of the circle on the paper and place the sharp-end of the compass on it. Holding the knob of the compass we let the compass swing around the sharp-end so that the pencil traces a complete circle in a single sweep. Remove the compass. The figure, thus, obtained is a circle of radius 4 cm.

Example 6 : The radius of a circle is 3.4 cm. Find its diameter.

Solution : Radius = 3.4 cm

Diameter = 2 × radius = 2 × 3.4 cm = 6.8 cm.

Example 7: The diameter of a circle is 7.4 cm . Find its radius.

Solution : Diameter = 74.8 cm

Since 2 × radius = diameter

$$\therefore \quad \text{radius} = \frac{\text{diameter}}{2} = \frac{7.4}{2}\text{ cm} = 3.7\text{ cm.}$$

Example 8 : The circumference of a circle is 176 cm. Find its radius.

Solution : We know that circumference = $2\pi \times$ radius $\left(\text{Take: } \pi = \frac{22}{7}\right)$

$$\text{Therefore,} \quad \text{radius} = \frac{\text{Circumference}}{2\pi}$$

$$= \frac{176\text{ cm}}{2 \times \frac{22}{7}} = \frac{176\text{ cm}}{\frac{44}{7}} = 176\text{ cm} \div \frac{44}{7}$$

$$= \cancel{176}^{4}\text{ cm} \times \frac{7}{\cancel{44}_{1}} = 28\text{ cm}$$

Example 9 : The radius of a circle is 5.6 cm. Find its circumference.

Solution : Radius = 5.6 cm = $\frac{56}{10}$ cm $\left(\text{Take: } \pi = \frac{22}{7}\right)$

Circumference of the circle = 2p × radius

$$\cancel{2}^{1} \times \frac{22}{\cancel{7}_{1}} \times \frac{\cancel{56}^{8}}{\cancel{10}_{5}}\text{ cm } \frac{176}{5}\text{ cm} = 35.2\text{ cm}$$

Interior and Exterior of a Closed Curve

Let us consider that ABC is a closed curve. It divides the plane into three parts :

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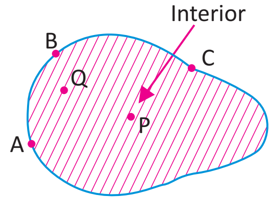
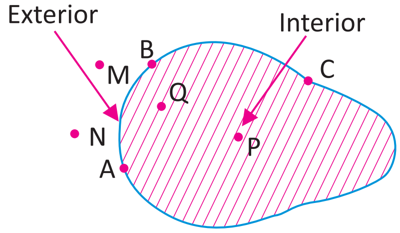
(i) Interior of the Closed Curve



The shaded region is the interior of the closed curve ABC. Points P and Q lie in the interior of the closed curve.

(ii) Exterior of the Closed Curve

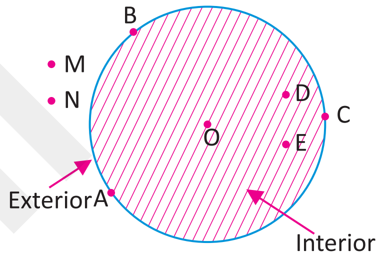


In the adjoining Fig., points M and N lie in the exterior of the closed curve ABC.

(iii) Curve Itself

In the above Fig., points A, B and C lie on the curve ABC itself.

Like a simple closed curve, a circle also divides the plane into three parts-interior of the circle, exterior of the circle and the circle itself as shown in the adjoining figure.



Points O, E, D lie in the interior of the circle. Points M and N lie in the exterior of the circle. Points A, B and C lie on the boundary of the circle.

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Exercise 7.4

Knowledge Application

1. Multiple Choice Questions (MCQs)

Choose the correct option.

(a) If the radius of a circle is 6 cm, then its diameter will be

(i) 10 cm ☐ (ii) 12 cm ☐ (iii) 3 cm ☐

(b) The longest chord of a circle is

(i) diameter ☐ (ii) radius ☐ (iii) None of these ☐

(c) The distance between any point on a circle and the centre is called

(i) diameter ☐ (ii) chord ☐ (iii) radius ☐

2. Draw a circle whose radius is :

(a) 5 cm (b) 4.8 cm (c) 5.3 cm

3. Find the radius of the circle whose diameter is :

(a) 12 cm (b) 9.3 cm (c) 6.9 cm

4. Find the diameter of the circle whose radius is :

(a) 4 cm (b) 6.8 cm (c) 9.6 cm

5. **Find the circumference of the circle whose radius is :** $\left(\text{Take: } \pi = \frac{22}{7}\right)$

(a) 2.8 cm (b) 5.6 cm (c) 7.0 cm

6. **Find the circumference of the circle whose diameter is :** $\left(\text{Take: } \pi = \frac{22}{7}\right)$

(a) 4.2 cm (b) 7 cm (c) 9.8 cm

7. **Find the radius of the circle whose circumference is :**

(a) 88 cm (b) 132 cm (c) 264 cm

Think Tank

Gap Analyzer™
Take a Test

1. **Tick (✓) the correct answer.**

(a) A ray has ________________ end point.

(i) one ☐ (ii) two ☐ (iii) three ☐ (iv) four ☐

(b) An angle of 90° is called ________________ angle.

(i) acute ☐ (ii) right ☐ (iii) obtuse ☐ (iv) none of these ☐

(c) The circumference of a circle is equal to

(i) π d ☐ (ii) 2π r ☐ (iii) $3 \times d$ ☐ (iv) $8\pi r$ ☐

2. **Fill in the blanks :**

(a) Diameter = ________________ × radius.

(b) A line segment whose end-points lie on the circumference of the circle is called ________________.

(c) radius = circumference ÷ ________________.

(d) Circumference = $2\pi \times$ ________________.

(e) A line segment whose end-points lie on the circle and which passes through the centre is called ________________.

3. **Match the following.**

(a) Straight angle (i) Less than one-fourth of a revolution

(b) Right angle (ii) More than half a revolution

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(c) Acute angle | (iii) Half of a revolution
(d) Obtuse angle | (iv) One-fourth of a revolution
(e) Reflex angle | (v) Between $\frac{1}{4}$ and $\frac{1}{2}$ of a revolution

Custom Learning Path

Scan to Create Your Own Learning Path

Puzzle

Conceptual Learning

Hidden in the puzzle below are 10 terms used in origami and geometry. The words may be spelled vertically and horizontally. Some letters may be used in more than one word.

C	A	N	G	L	E	P	I	P
I	O	T	S	Q	T	M	R	R
R	R	A	V	E	R	T	E	X
C	J	K	U	M	I	R	C	O
U	A	C	R	S	A	I	T	B
M	I	H	N	G	N	A	A	T
F	H	O	V	A	R	N	N	U
E	O	R	H	C	A	G	G	S
R	A	D	I	U	S	L	L	E
E	P	Q	R	T	S	E	E	A
N	S	M	L	E	O	T	H	I
C	V	E	M	G	T	E	N	C
E	D	I	A	M	E	T	E	R

Help Box

TRIANGLE
RECTANGLE
ANGLE
VERTEX
OBTUSE
ACUTE
CHORD
RADIUS
DIAMETER
CIRCUMFERENCE

Fun Time Activity

Problem Solving

How many can you draw. Tick (✓) the correct option.

1. Rays starting from a point : One ☐ Two ☐ Many ☐
2. Lines passing through two points : One ☐ Two ☐ Many ☐
3. Line segment through two points : One ☐ Two ☐ Many ☐

HOTS

Critical Thinking

Join any three dots to make—

1. an acute angle

• • •

• • •

2. an obtuse angle

• • •

• • •

3. a right angle

• • •

• • •

4. a straight angle

• • •

• • •

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