

MATHEMATICS

CHAPTER NUMBER :~ 6

CHAPTER NAME :~ LINES AND ANGLES

CHANGING YOUR TOMORROW

LEARNING OUTCOME:~

1. Students will be able to learn basic terms and definitions of lines and angles.
2. Students will be able to learn different types of angle.

1. Point ~ A Point is that which has no component. It is represented by a dot.
2. Line ~ When we join two distinct points then we get a line. A line has no endpoints it can be extended infinitely.

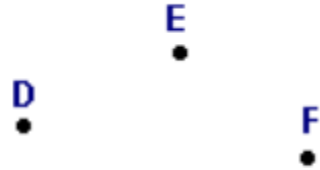
3. Line Segment ~ It is the part of the line which has two endpoints.

4. Ray ~ Ray is also a part of the line which has only one endpoint and has no end on the other side.

5. **Collinear and Non-collinear points** – Points lie on the same line are known as collinear points and the points that don't lie on the same line are known as **Non-Collinear Points**.



Collinear Points





Noncollinear Points

When two rays begin from the same endpoint then they form an
Angle.

The two rays are the arms of the angle and the endpoint is the
vertex of the angle.

Types of Angles

Angle	Notation	Image
Acute	An angle which is between 0° and 90° .	 A diagram showing an acute angle. It consists of two rays meeting at a vertex. One ray is horizontal and points to the right, while the other ray points upwards and to the right. A small arc is drawn between the two rays to indicate the angle.
Right	An angle which is exactly equal to 90° .	 A diagram showing a right angle. It consists of two rays meeting at a vertex. One ray is vertical and points upwards, while the other ray is horizontal and points to the right. A small square is drawn at the vertex to indicate the angle.



Obtuse Angle

An angle which is between 90° and 180° .

Reflex Angle

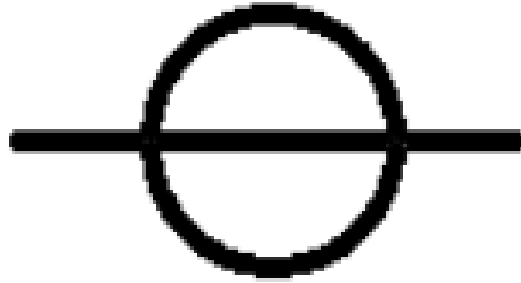
An angle which is between 180° and 360°



Straight Angle

An angle which is exactly equal to 180° .





Complete Angle

An angle which is exactly equal to 360° .

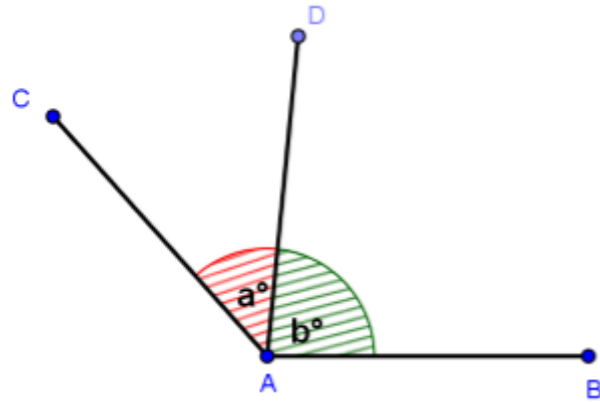
Complementary and Supplementary Angles

Complementary Angles are those which have the sum of two angles as 90° .

Supplementary Angles are those which have the sum of two angles as 180° .

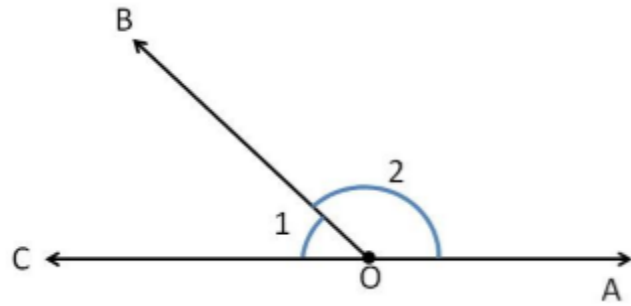
Adjacent Angles

If two angles have the same vertex and their one of the arm is common then these are called adjacent angles.



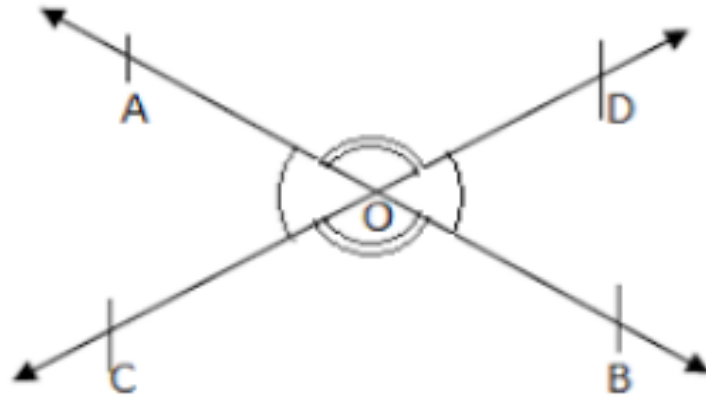
Linear pair of Angles

If two angles have the same vertex and one common arm but the arms which are not common are making a line then these are called the linear pair of angles.



Vertically opposite Angles

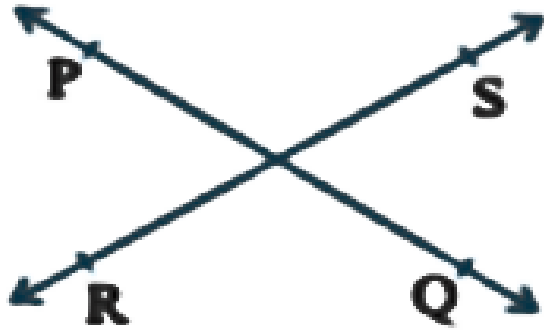
If two lines intersect each other at a point then the opposite angles are vertically opposite angles.



Intersecting Lines and Non-intersecting Lines

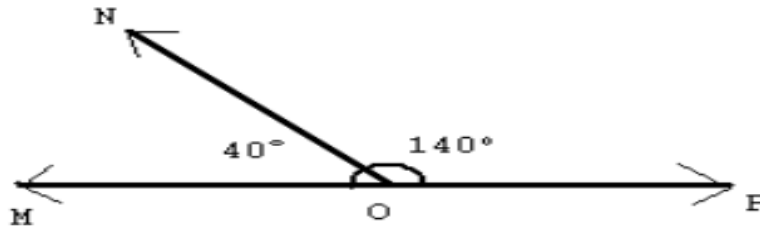
There are two ways to draw two lines~

1. The lines which cross each other from a particular point is called Intersecting Lines.
2. The lines which never cross each other at any point are called Non-intersecting Lines. These lines are called Parallel Lines



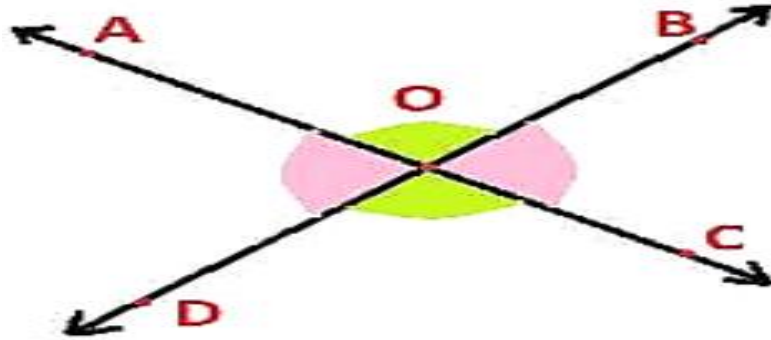
Pairs of Angles Axioms

1. If a ray stands on a line, then the sum of two adjacent angles formed by that ray is 180° .



2. If the sum of two adjacent angles is 180° , then the arms which are not common of the angles form a line.

This is the reverse of the first axiom which says that the opposite is also true.



Vertically opposite Angles Theorem

When two lines intersect each other, then the vertically opposite angles so formed will be equal.

$$\angle AOD = \angle BOC \text{ and } \angle AOB = \angle DOC.$$

Evaluation:~

Define the following

A. Vertically Opposite Angle

B. Linear Pair of Angles

C. Supplementary Angle

Homework assignment

EXERCISE 6.1 Q No 1 to 4

AHA:~

1. Prove that if two lines intersect each other , then the bisectors of the vertically opposite angles are on the same line
2. The two complementary angles are in the ratio 1 : 5. Find the measures of the angles.

THANKING YOU
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