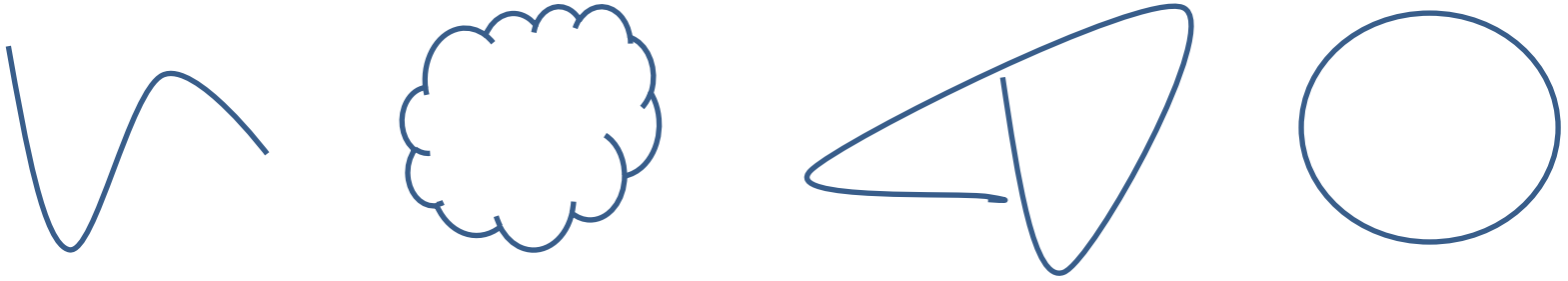
AIR FORCE SCHOOL
BAGDOGRA

CLASS - V
CHAPTER – 2 (SHAPES AND ANGLES)
SUBJECT – MATHS

SHAPES

Straight lines - A **straight line** is essentially just a line with no curves. A **straight line** is the shortest **line** which joins any two points. It always moves in one direction.

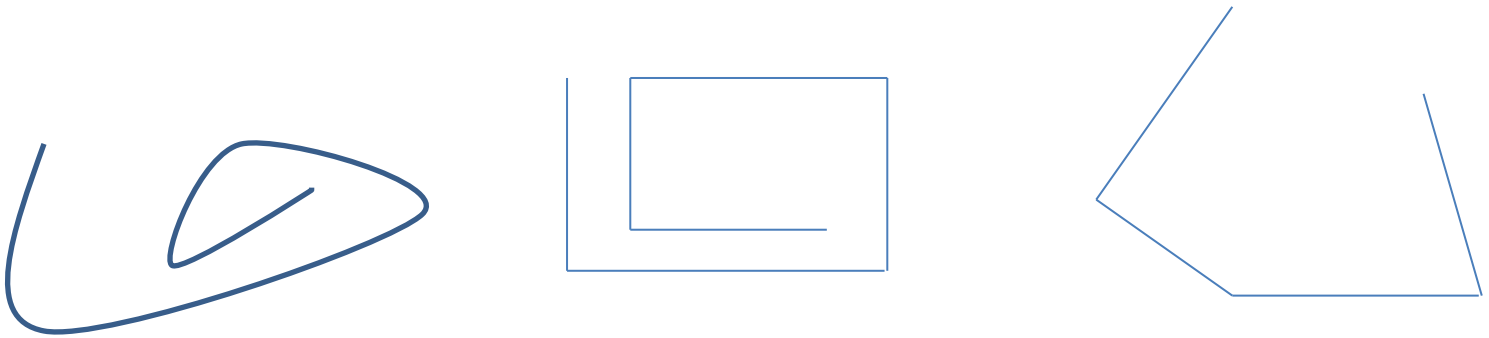
Curved lines - A bent **line** which is not **straight** is called **Curved Line** It doesn't move in one direction. If the curvature is not zero, it is considered as a curve line. Ideally, it is smooth and continuous.



Open shapes

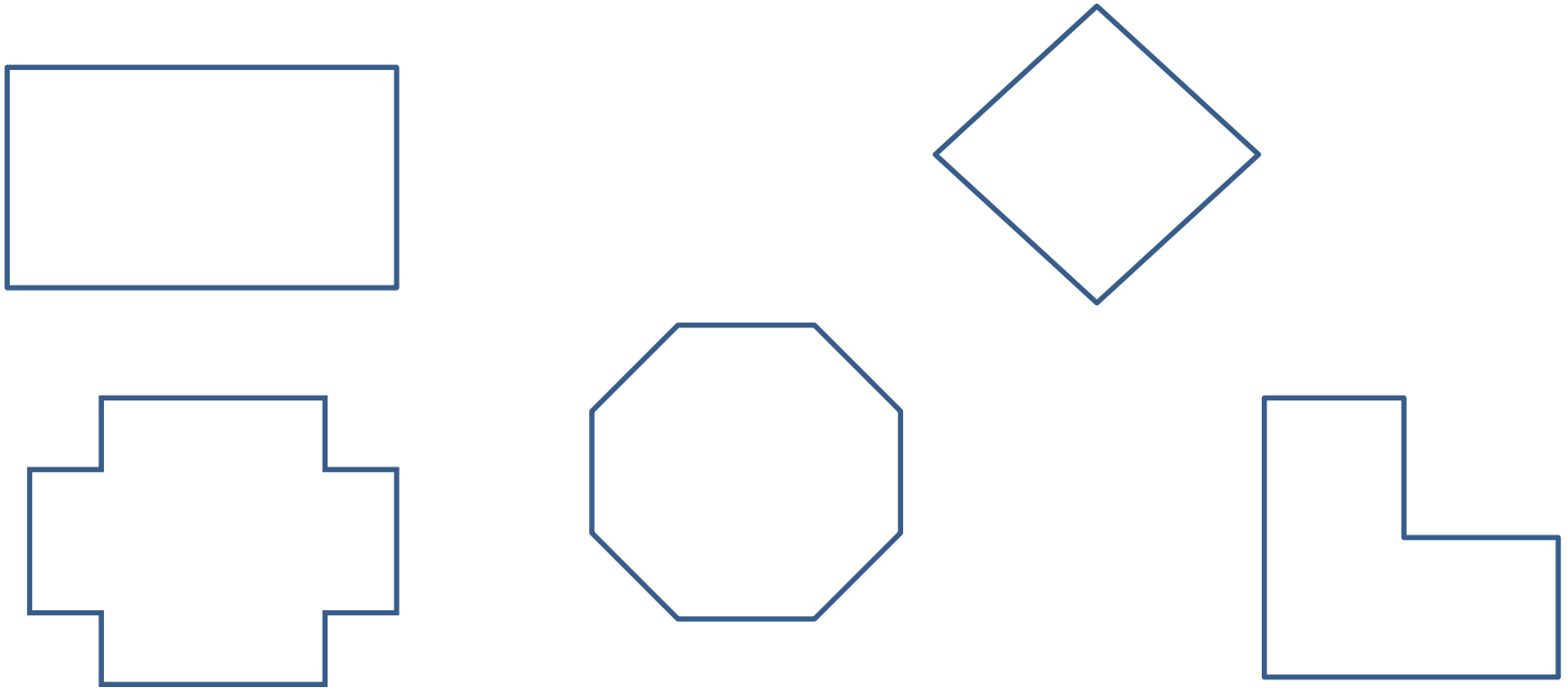
If a shape is closed, you can take a pencil and trace it all the way around back to where you started, without running into any breaks. If there is a break in the shape, that means it is not closed and is called an **open shape**.

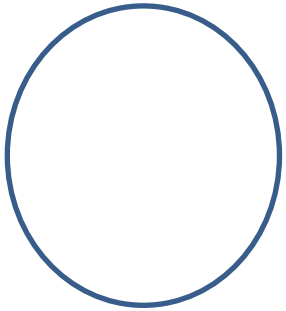
An open shape is made up of line segments, but there is at least one line segment that isn't connected to anything at one of its endpoints. The shape is not a closed figure.

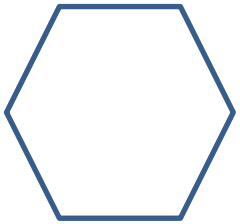


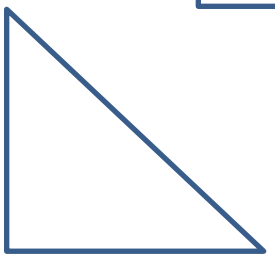
Closed shapes

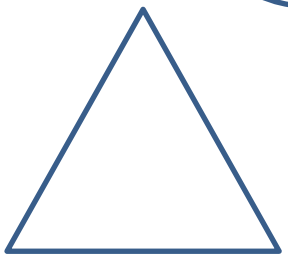
If a shape is enclosed from all the sides end-to-end and form a figure with no openings is called a closed shape.

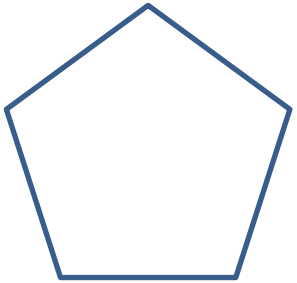


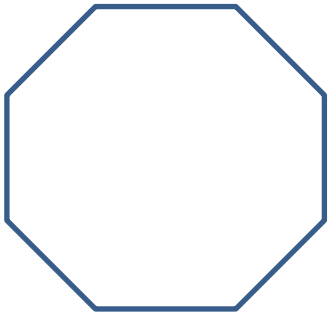








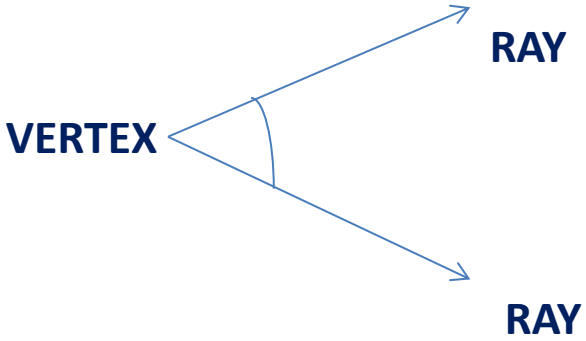




ANGLES

What is an angle?

In plane geometry, an angle is the figure formed by two rays, called the sides of the angle, sharing a common endpoint, called the vertex of the angle.



AN ANGLE

The two sides that meet at a corner form an angle.

POINT - A point is the basic unit of geometry. It shows an exact location.

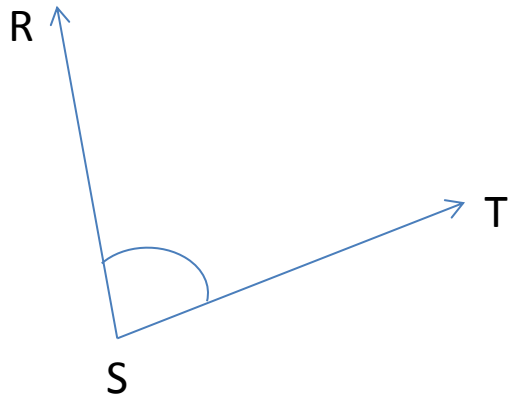
LINE - A line is a collection of points going endlessly in both directions along a straight path.

RAY – A ray is part of a line. It has one endpoint and goes on endlessly in one direction.

LINE SEGMENT - A line segment is part of a line. It has two endpoints. It has a fixed length.

Parts of an Angle

When two rays have a common endpoint they form an angle.



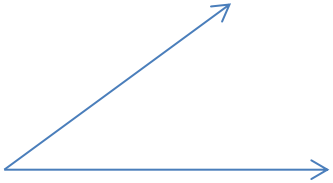
SR and ST together form an angle. The common endpoint(S) is called the **vertex** of the angle. SR and ST are called the arms of the angle. The angle alongside is called **angle RST or angle TSR.**

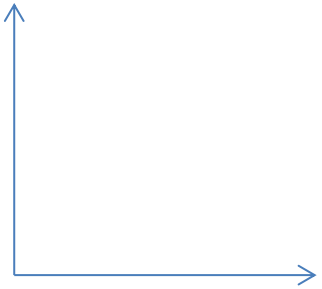
The symbol for angle is ∠ . We write ∠RST OR ∠TSR to name the angle.

The middle letter is always the vertex of the angle.

TYPES OF ANGLES

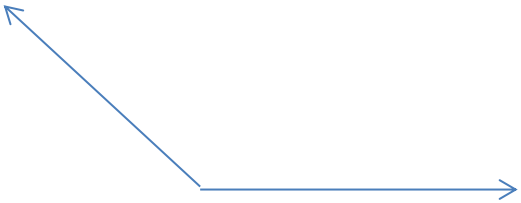
Acute angle – An **angle** between 0 and 90 degrees.





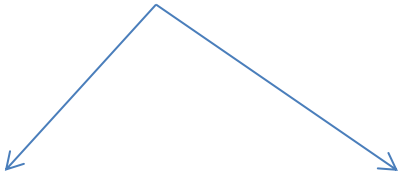
Right angle - A 90 degree **angle**.

Obtuse angle - An **angle** between 90 and 180 degrees.



Straight angle – A 180 degree **angle**.

Reflex angles – An angle between 180 and 360 degree ie. Greater than 180 ° and less than 360°.



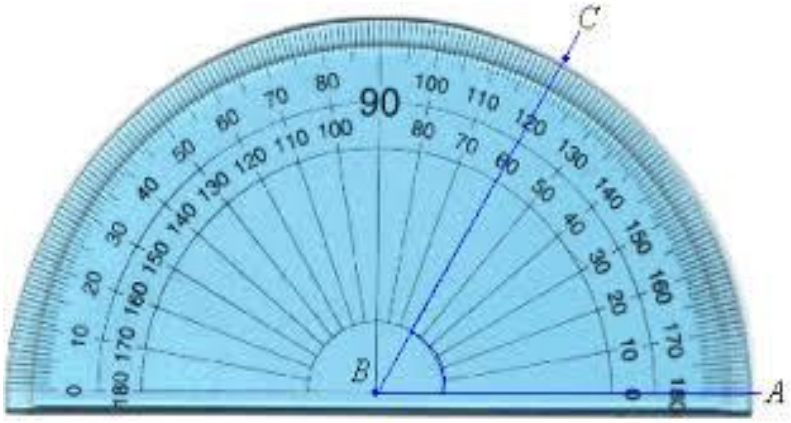
Drawing Angles less than 180° with a Protractor

- To draw an angle with a protractor, proceed as follows :
- Draw a straight line (i.e. an arm of the angle).
- Place a dot at one end of the arm. This dot represents the vertex of the angle.
- Place the centre of the protractor at the vertex dot and the baseline of the protractor along the arm of the angle.
- Find the required angle on the scale and then mark a small dot at the edge of the protractor.
- Join the small dot to the vertex with a ruler to form the second arm of the angle.
- Label the angle with capital letters.

Example 1

Draw $\angle ABC = 60^\circ$ with a ruler and protractor.

Solution:



Draw a straight line *AB*.

Place a dot at *B*. This dot represents the vertex of the angle.

Place the centre of the protractor at *B* and the baseline of the protractor along the arm *BA*.

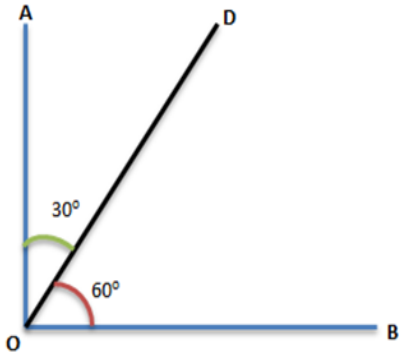
Find 60º on the scale and mark a small dot at the edge of the protractor.

Join the vertex *B* to the small dot with a ruler to form the second arm, *BC*, of the angle.

Mark the angle with a small arc as shown below.

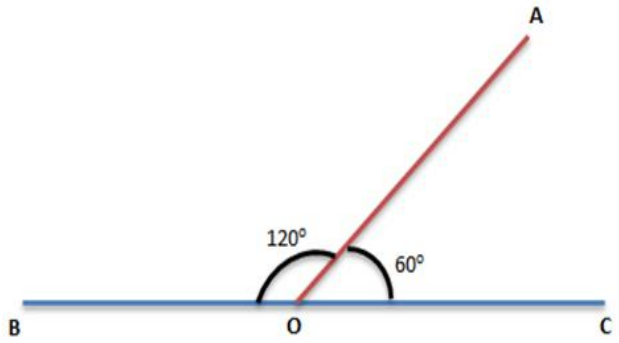
Complementary Angles

When the sum of two angles is 90°, then the angles are known as **complementary angles**. In other words, if two angles add up to form a right angle, then these angles are referred to as complementary angles. Here we say, that the two angles complement each other.
For example :- complementary of 60° is 30°.
(60° + 30° = 90°)



Supplementary Angles

When the sum of two angles is 180°, then the angles are known as supplementary angles. In other words, if two angles add up to form a straight angle, then those angles are referred to as **supplementary angles**. These two angles form a linear angle.
For example:- supplementary of 120° is 60°.
(120°+ 60°=180°)



Link to watch: -

https://youtu.be/2JSk0DC5q4g

https://youtu.be/9RTM418qfdI

https://youtu.be/dqg1DQCJa-E

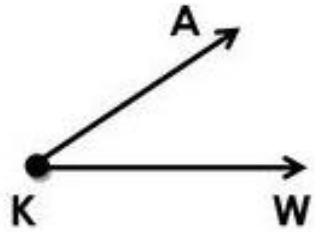
https://youtu.be/3NHnTHhnv8g

WORKSHEET - 1

Fill in the blanks :-

1. You cannot measure a ray and a _____ .
2. A part of a line that has two endpoints is a _____.
3. An angle that looks like the corner of a cupboard is a _____.
4. An angle is formed by two _____ having a common endpoint.
5. An obtuse angle is more than _____° and less than _____°.
6. Name all the line segments here. There are six.

WORKSHEET - 2



What is the name of this angle? _____

What the vertex of this angle? _____

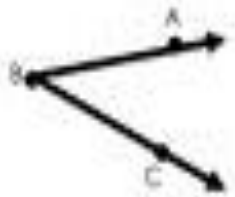
What type of angle is this?

a. obtuse angle **b.** acute angle **c.** right angle

Name the 2 rays of this angle:

_____ and _____

WORKSHEET - 3



Give 2 Names for the Angle:

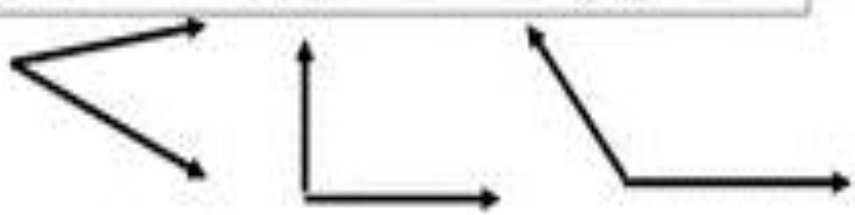
1) _____ and 2) _____

3) What is the vertex of this angle?

Point ___

Label the angles using terms from the wordbank:

RIGHT	OBTUSE	ACUTE



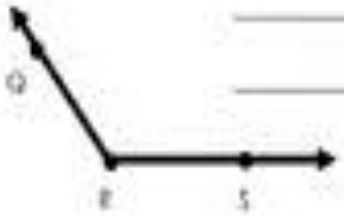
4) _____ 5) _____ 6) _____

7) Betty named the angle below Angle QSR. Is she correct? EXPLAIN.

_____

_____

_____



WORKSHEET - 4

Fill in the blanks:

1. 1/3 of a right angle is ————————.
2. The number of right angles in a square is ————————.
3. The clock time at which the hands of a clock forms an acute angle is ——
4. Two times of a right angle is ————————.
5. ——— is used to measure an angle.

Answer the following:

6. Draw a clock showing the time 3'O clock and write the angle indicated on the clock face.
7. Write four English alphabets where you can see a right angle.
8. Write Sanu's name by straight lines. Mark all the angles as acute, obtuse or right angle.
9. Draw an acute angle and name it.
10. Draw the positions of the hands of a clock at the given time and write the name of the angle thus formed

Time: 2'O Clock

11. Classify the following angles as acute, obtuse, right and straight angle

a) 125

b) 30

c) 90

d) 180

e) 2 x 90

f) 175

g) 85

12. Write the number of acute and obtuse angles in the letter A.

13. Write two clock time at which the hand of a clock forms a right angle.

14. Can you draw the hands of the clock when they make an angle which is made by the hands at these times?

a) 4’O Clock

b) 2’O Clock

15. Draw an angle of 45 degree using protractor.

THANK YOU