

**Grade 9-Mathematics (English Medium)**

**UNIT 07 -AXIOMS**

**Lesson 01**

- Statements which are considered to be self evident and accepted without proof are called axioms.
- In mathematics axioms are used to explain facts logically,develop relationships and reach conclusions.

➤ **Axiom 1**

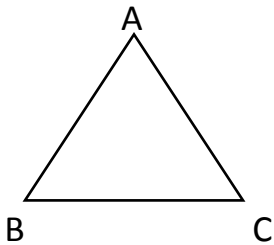
Quantities which are equal to the same quantity ,are equal.

**If  $b=a$  and  $c=a$  ,then  $b=c$**

(By 'quantities' we usually mean lengths ,areas ,volumes ,masses, speeds, magnitudes of angels.etc)

**Example 1**

In the triangle given below,  $AB=BC$  and  $BC=AC$

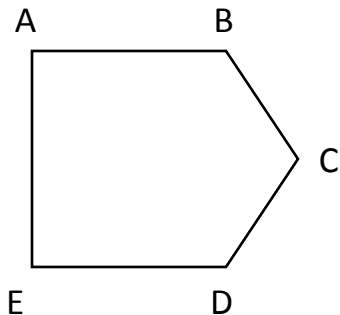


According to the axiom 1,

$AB=AC$

### Example2

In the pentagon given below  $AB=AE$  and  $DE=AE$



According to the axiom 1,  
 $AB=DE$

### Activity 1

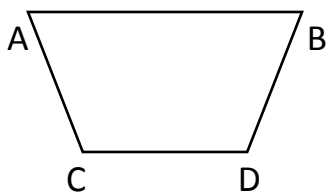
Using axioms and the relations given below, write conclusions that can be arrived.

- i.  $PQ=RS$  and  $PQ=ST$
- ii.  $\angle ABC=45^\circ$  and  $\angle PQR=45^\circ$
- iii.  $a+b=180^\circ$  and  $p+q=180^\circ$

### Activity 2

Fill in the blanks.

In the quadrilateral given below,



$AC=CD$  and  $CD=BD$

Show that  $AC=BD$

$AC=$ ------(given)

$CD=$ -----(------)

According to the axiom1 ,  $AC=$ -----

Assignment -Write an article about the farther of geometry.

Home work- Do the exercise 7..1