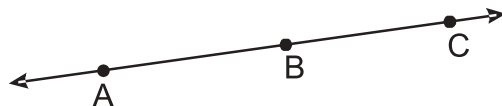


### Part – A

1. Write the number of dimensions, that a surface contain.
2. A proof is required for \_\_\_\_\_ (Postulate, Axioms, Theorem).
3. The number of line segments determined by three collinear points is \_\_\_\_\_ (Two, three, only one).
4. Euclid stated that if Equals are subtracted from Equal then the remainders are equal in the form of \_\_\_\_\_ (an axiom, a definition, a postulate).
5. In given figure  $AD = BC$  then  $AC$  and  $BD$  are equal or not?



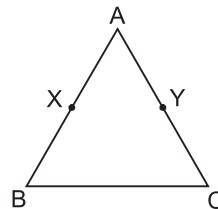
6. How many lines can pass through a single point ?
7. State Euclid's first postulate.
8. Write Euclid's fifth postulate.
9. If  $a + b = 15$  and  $a + b + c = 15 + c$   
which axiom of Euclid does the statement illustrate?
10. If A, B and C are three points on a line and B is between A and C then prove that  $AC - BC = AB$ .



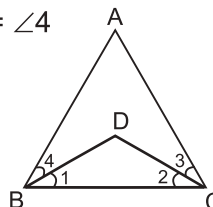
### Part – B

11. If  $x + y = 10$  and  $x = z$  then show that  $z + y = 10$
12. In given figure  $AX = AY, AB = AC$

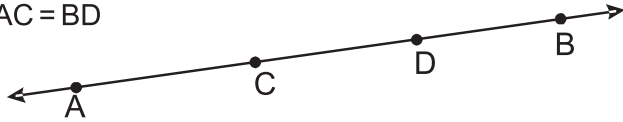
Show that :  $BX = CY$



13. In given figure  $\angle ABC = \angle ACB$  and  $\angle 3 = \angle 4$   
Show that  $\angle 1 = \angle 2$



14. In the given figure of  $AD = CB$   
then prove that  $AC = BD$



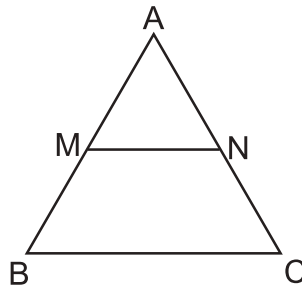
15. Solve the equation  $x - 10 = 15$ , State which axiom do you use here.  
16. If a point C lies between two points A and B such that  $AC = BC$  then prove that

$$AC = \frac{1}{2} AB$$

17. In the given figure

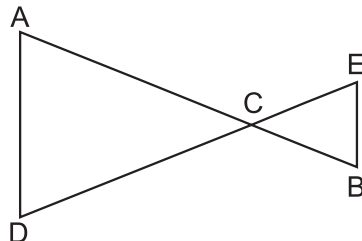
$$AM = \frac{1}{2} AB$$

$$AN = \frac{1}{2} AC$$



show that  $AB = AC$

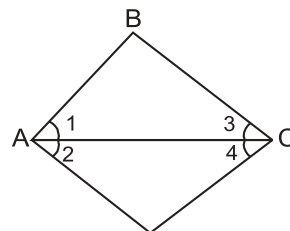
18. In the given figure  $AC = DC$ ,  $CB = CE$   
then show that  $AB = DE$



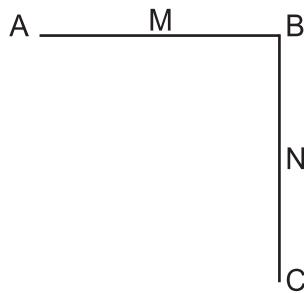
19. Prove that every line segment has one and only one mid point.  
20. State true or false  
(a) only one line can pass through a single point.  
(b) There are infinitely many number of lines which passes through the two distinct point.  
(c) Euclid belongs to Greece.

**Part – C**

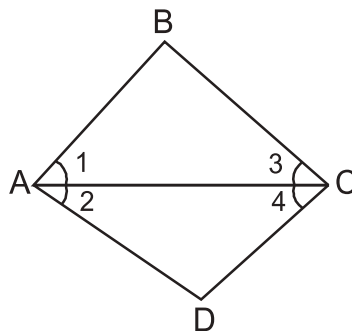
21. In the given figure  $\angle 1 = \angle 2$  and  $\angle 2 = \angle 3$   
then show that  $\angle 1 = \angle 3$



22. In the give figure  $AB = BC$ , M is the mid point of AB and N is the mid point of BC. Show that  $AM = NC$



23. In the given figure  $\angle 1 = \angle 3$  and  $\angle 2 = \angle 4$   
then show that  $\angle BAD = \angle BCD$



24. An equilateral triangle is a polygon made up of three line segments out of which two line segments are equal to the third one and all the angles are  $60^\circ$  each.

Can you justify that all sides and all angles are equal in equilateral triangle?

25. RAM and Shyam are two students of Class IX. They give equal donation to a blind school in the month of March. In April each student double their donation.
- compare their donation in April.
  - which mathematical concept have been covered in this question?
26. Monika and Vasu have the same weight if they both gain weight by 2kg. How will their new weights be compared?
- What mathematical concept have been covered in this question?