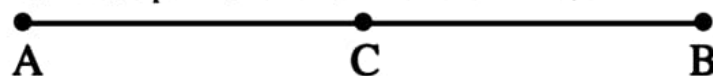


INTRODUCTION TO EUCLID'S GEOMETRY

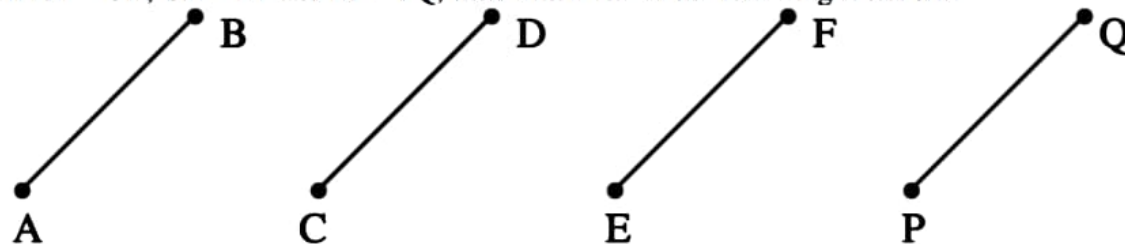
1. According to Euclid's definition, the ends of a line are
(a) breadthless (b) points (c) lengthless (d) none of these
2. According to listing in the class IX book of NCERT, the first axiom is
(a) Things which are equal to the same thing, are equal to each other
(b) If equal are added to equals, the result are equal
(c) If equals are subtracted from equals, the results are equal
(d) The whole is greater than its part.
3. Things which are three times of the same thing are
(a) equal to each other (b) not equal to each other
(c) half of the same thing (d) double of the same thing
4. A solid has
(a) no dimension (b) one dimension
(c) two dimension (d) three dimension

5. If a point C lies between two points A and B such that $AC = BC$, then



- (a) $AC = AB$ (b) $AC = \frac{1}{2} AB$ (c) $AB = \frac{1}{2} AC$ (d) $AC = \frac{1}{3} AB$
6. $\angle A = \angle B$ and $\angle B = \angle C$. According to which axiom of Euclid the relation between $\angle A$ and $\angle C$ is established?
(a) I (b) II (c) III (d) IV
7. Two distinct two points
(a) any point in common (b) one point in common
(c) two points in common (d) none of the these
8. Through two points
(a) no line can be drawn (b) a unique line can be drawn
(c) more than one line can be drawn (d) none of these

9. If $AB = CD$, $CD = EF$ and $EF = PQ$, then which one of the following is not true



- (a) $AB = PQ$ (b) $CD = PQ$ (c) $AB = EF$ (d) $AB \neq CD$

10. For every line l and for every point P (not on l), there does not exist a unique line through P .
(a) which is $\parallel$ to l (b) which is $\perp$ to l (c) which is coincident with l (d) none of these

11. Euclid stated that all right angles are equal to each other in the form of
(a) a theorem (b) an axiom (c) a definition (d) a postulate

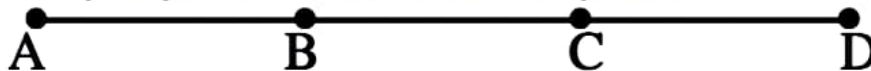
12. Lines are parallel if they do not intersect is stated in the form of
(a) a proof (b) an axiom (c) a definition (d) a postulate

13. Euclid stated that all right angles are equal to each other in the form of
(a) an axiom (b) a definition (c) a postulate (d) a proof

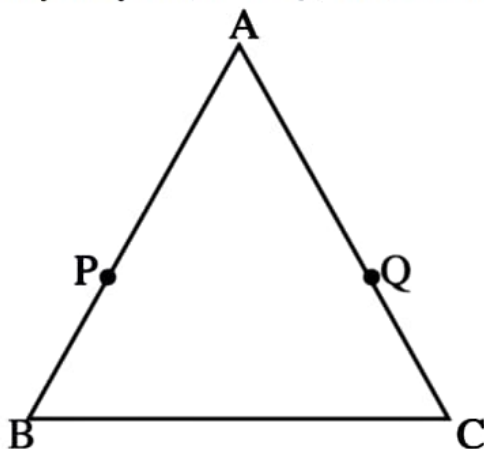
14. 'Lines are parallel if they do not intersect' is stated in the form of
(a) an axiom (b) a definition (c) a postulate (d) a proof

INTRODUCTION TO EUCLID'S GEOMETRY

1. What was name of the famous book of Euclid? How many chapters it had?
2. It is known that $x + y = 10$. Is it true to say that $x + y + p = 10 + p$?
3. If $AB = CD$, can you say that $AC = BD$? Give reasons for your answer.

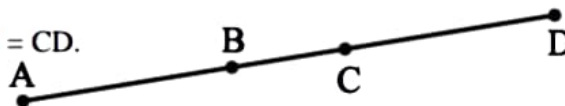


4. If $\angle 1 = \angle 2$, $\angle 3 = \angle 4$ and $\angle 2 = \angle 4$, what is the relation between $\angle 1$ and $\angle 3$. Give reasons for your answer.
5. If $AB = 4$ cm, $CD = 8$ cm and $PQ = 2$ times AB . Are CD and Pq equal? Which axiom is used for proving this?
6. $AB = AC$ and $AP = AQ$. Can you say that $BP = CQ$? Which axioms are you using for this?

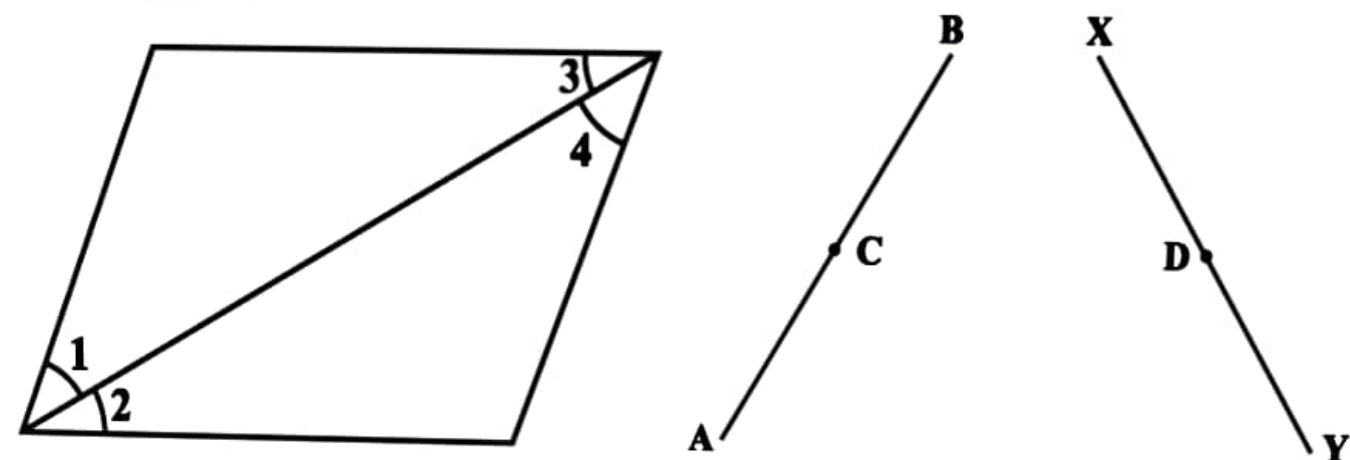


7. $l = 3$ cm long and lengths of lines m and n are three-fourth the length of l . Are m and n equal?
8. How would you rewrite Euclid's fifth postulate so that it would be easier to understand?
9. Does Euclid's fifth postulate imply the existence of parallel lines? Explain.
10. Consider the following statement : There exists a pair of straight lines that are everywhere equidistant from one another. Is this statement a direct consequence of Euclid's fifth postulate? Explain.
11. If A , B and C are three points on a line, and B lies between A and C , then prove that $AB + BC = AC$.
12. Prove that an equilateral triangle can be constructed on any given line segment.
13. If a point C lies between two points A and B such that $AC = BC$, then prove that $AC = \frac{1}{2} AB$.
Explain by drawing the figure.

14. In adjoining figure, if $AC = BD$, then prove that $AB = CD$.



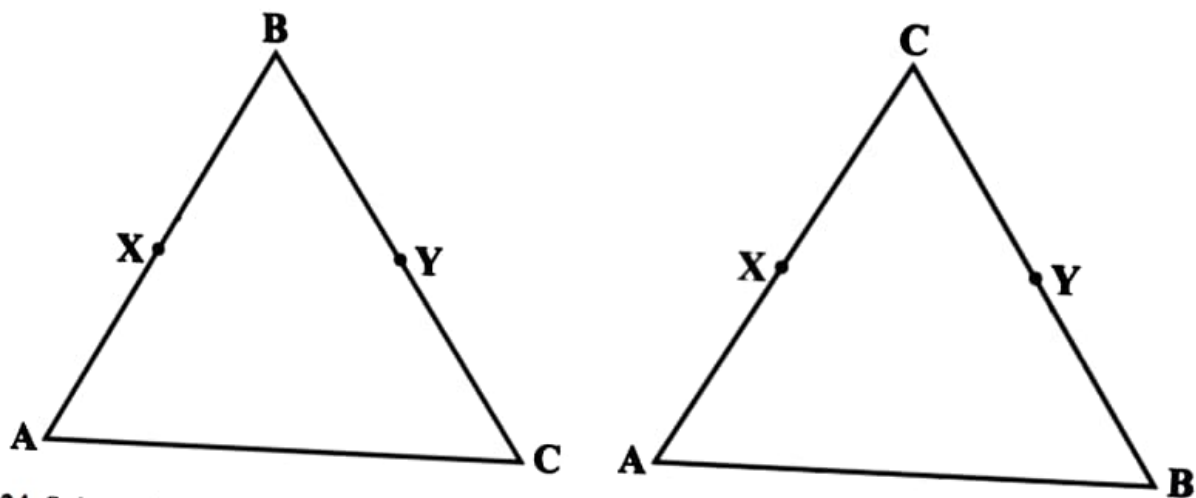
15. If a point C is called a mid-point of line segment AB. Prove that every line segment has one and only one mid-point.
16. Ram and Ravi have the same weight. If they each gain weight by 2 kg, how will their new weights be compared?
17. Solve the equation $a - 15 = 25$ and state which axiom do you use here.
18. In the Fig., if $\angle 1 = \angle 3$, $\angle 2 = \angle 4$ and $\angle 3 = \angle 4$, write the relation between $\angle 1$ and $\angle 2$, using an Euclid's axiom.



19. In the above right sided Figure, we have : $AC = XD$, C is the mid-point of AB and D is the mid-point of XY. Using an Euclid's axiom, show that $AB = XY$.
20. Solve using appropriate Euclid's axiom: "Two salesmen make equal sales during the month of August. In September, each salesman doubles his sale of the month of August. Compare their sales in September."
21. Solve using appropriate Euclid's axiom: It is known that $x + y = 10$ and that $x = z$. Show that $z + y = 10$?
22. Solve using appropriate Euclid's axiom: Look at the below Figure. Show that length $AH >$ sum of lengths of $AB + BC + CD$.



23. Solve using appropriate Euclid's axiom : In the below Figure, we have $AB = BC$, $BX = BY$. Show that $AX = CY$.



24. Solve using appropriate Euclid's axiom : In the above right sided figure, it is given that $AB = BC$, $BX = BY$. Show that $AX = CY$.