MATHS

BOOKS - NAGEEN PRAKASHAN ENGLISH

INTRODUCTION TO EUCLID'S GEOMETRY

Solved Example

1. If lines AB,AC,AD and AE are parallel to a line l show that points A,B,C,D and E are collinear.

2. If A, B and C are three poins on a line and B lies between A and C, then prove that AB + BC = AC.

3. Which of the following statements are true and which are false? Give reasons for youranswers.(i) Only one line can pass through a single point.(ii) There are an infinite number of lines which pass through two distinct points.(iii) A termin

4. Give a definition for each of the following terms. Are there other terms that need to be

defined first? What are they, and how might you define them? (i) parallel lines (ii) perpendicular lines (iii) line segment (iv) radius of a circle (v) s

5. Read the following statement :

"A square is a polygon made up of four line segments, out of which, length of 3 line segments are equal to the length of forth one and all its angles are right angles". Define the

terms used in this definition which you feel necessary. Are there any undefined terms in this ? Can you justify that all the angles and sides of a square are equal?

Problems From NCERT/exemplar

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

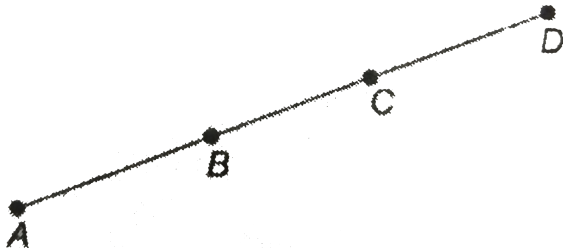$AC = \dfrac{1}{2}AB.$ Explain by drawing the figure.

2. In Question 4, point C is called a mid-point of line segment AB. Prove that every line segment has one and only one mid-point.

3. In the given figure below, if AC = BD then prove that AB = CD.

4. Prove that an equilateral triangle can be constructed on any given line segment.

1. Write which of the following are true and which are false?

(i) Every ray has a finite length.

(ii) Two lines intersect at a point. .

(iii) A terminated line can be produced indefinitely on both the sides.

(iv) A segment has one end point only.

(v) If two circles are equl, then their radii are equal.

2. 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.

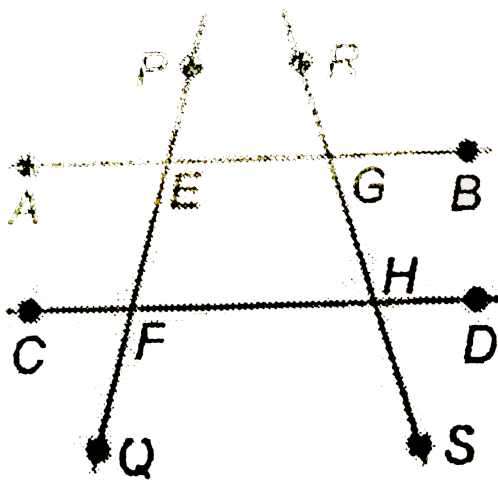**3.** In the adjoining figure, name :

(i) four points

(ii) four line segments

(iii) four rays

4. Prove that every line segment has one and only one mid-point.

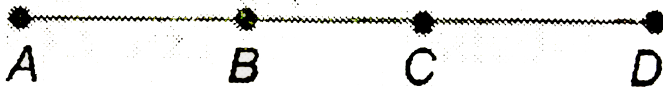**5.** Prove that two lines perpendicular to the same line are parallel to each other.

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6. How would you rewrite Euclids fifth postulate so that it would be easier to understand?

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7. In the given figure AC = BD, prove that AB = CD.

8. Solve the equation $a - 15 = 25$ and state which axiom do you use here.