Introduction To Euclids Geometry Ex 7.1

RD Sharma Solutions Class 9 Chapter 7 Ex 7.1

1) Define the following terms.

(i) Line segment   *(v) Concurrent lines*

(ii) Collinear points   *(vi) Ray*

(iii) Parallel lines   *(vii) Half-line*

(iv) Intersecting lines

Solution

(i) Line-segment:

Give two points A and B on a line I. the connected part (segment) of the line with end points at A and B is called the line segment AB.

(ii) Collinear points:

Three or more points are said to be collinear if there is a line which contains all of them.
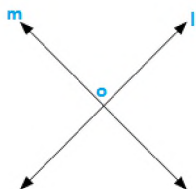
(iii) Parallel lines:

Two lines I and m in a plane are said to be parallel lines if they do not intersect each other.
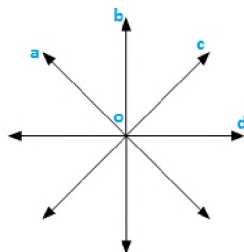
(iv) Intersecting lines:

Two lines are intersecting if they have a common point. The common point is called point of intersection.

(v) Concurrent lines:

Three or more lines are said to be concurrent if there is a point which lies on all of them.

(vi) Ray:

A line in which one end point is fixed and the other part can be extended endlessly.

(vii) Half-line:

If A, B. C be the points on a line I, such that A lies between B and C, and we delete the point A from line I, the two parts of I that remain are each called half-line.

2) (i) How many lines can pan through a given point?

(ii) In how many points can two distinct lines at the most intersect?

Solution

(i) Infinitely many

(ii) One

3) (I) Given two points P and Q. Find how many line segments do they determine.

   (ii) Name the line segments determined by the three collinear points P. Q and R.

Solution

(i) One

(ii) PQ, QR, PR

4) Write the truth value (T/F) of each of the following statements:

(i) Two lines intersect in a point.

(ii) Two lines may intersect in two points

(iii) A segment has no length.

(iv) Two distinct points always determine a line.

(v) Every ray has a finite length.

(vi) A ray has one end-point only.

(vii) A segment has one end-point only.

(viii) The ray AB is same as ray BA.

(ix) Only a single line may pass through a given point.

(x) Two lines are coincident if they have only one point in common

Solution

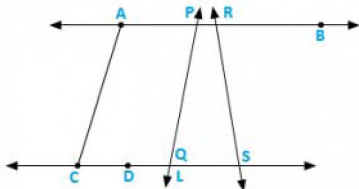|	
(i) False	(vi) True
(ii) False	(vii) False
(iii) False	(viii) False
(iv) True	(ix) False
(v) False	(x) False

5) In the below figure. Name the following:

 Solution:

(i) Five line segments AB, CD, AC, PQ. DS

(ii) Five rays $\overrightarrow{PA}$, $\overrightarrow{RB}$, $\overrightarrow{DC}$, $\overrightarrow{QS}$, $\overrightarrow{DS}$

(iii) Four collinear points. C, D, Q, S

(iv) Two pairs of non−intersecting line segments AB and CD, AB and LS.

6) Fill in the blanks so as to make the following statements true:

(i) Two distinct points in a plane determine a _____ line.

(ii) Two distinct _____ in a plane cannot have more than one point in common.

(iii) Given a line and a point, not on the line, there is one and only _____ line which passes through the given point and is _____ to the given line.

(iv) A line separates a plane into _____ parts namely the _____ and the ____ itself.

Solution

(i) Unique

(ii) Lines

(iii) Perpendicular, perpendicular

(iv) Three, two half planes, line.