



Basic Geometrical Concepts Ex 10.2 Q4

Answer :

If there are n points in a plane and no three of them are collinear, the number of line segments obtained by joining these points is equal to $\frac{n(n-1)}{2}$.

On applying the above formula, we get:

(i) For two points A and B:

$$\text{Number of line segments} = \frac{2(2-1)}{2} = 1$$

(ii) For three non-collinear points A, B and C:

$$\text{Number of line segments} = \frac{3(3-1)}{2} = \frac{3 \times 2}{2} = 3$$

(iii) For four points such that no three of them belong to the same line:

$$\text{Number of line segments} = \frac{4(4-1)}{2} = \frac{4 \times 3}{2} = 6$$

(iv) For any five points so that no three of them are collinear:

$$\text{Number of line segments} = \frac{5(5-1)}{2} = \frac{5 \times 4}{2} = 10$$

Basic Geometrical Concepts Ex 10.2 Q5

Answer :

Line segments in the given figure are AB, AC, AD, AE, BC, BD, BE, CD, CE and DE.
Thus, there are 10 line segments.

Basic Geometrical Concepts Ex 10.2 Q6

Answer :

Name of all rays with initial point as A : \overrightarrow{AP} and \overrightarrow{AB} or \overrightarrow{AC} or \overrightarrow{AQ}

Name of all rays with initial point as B : \overrightarrow{BP} , or \overrightarrow{BA} , and \overrightarrow{BC} or \overrightarrow{BQ}

Name of all rays with initial point as C : \overrightarrow{CP} , or \overrightarrow{CA} or \overrightarrow{CB} and \overrightarrow{CQ}

(i) No, because the origin point of both the rays \overrightarrow{AB} and \overrightarrow{AC} is same.

(ii) Yes, because the origin point of both the rays \overrightarrow{BA} and \overrightarrow{CA} is different.

(iii) Yes, because both the rays \overrightarrow{CP} and \overrightarrow{CQ} are in opposite directions.

Basic Geometrical Concepts Ex 10.2 Q7

Answer :

Examples of line segments in our home is:

(i) grout lines in the tile floors

(ii) grooves where wooden flooring connects

(iii) metal outline of a sliding glass door

