

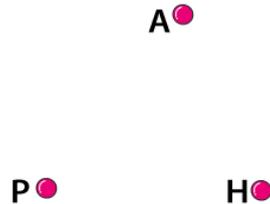
Board –CBSE

Class – 6th

Topic – Basic Geometrical Concepts

1. Make three points in your notebook and name them.

Ans. The three points A, P and H are marked as given below:



2. There are a number of ways by which we can visualise a portion of a line. State whether the following

represent a portion of a line or not:

(i) A piece of elastic stretched to the breaking point.

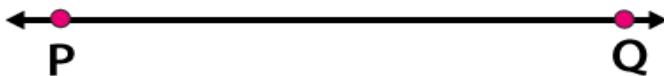
(ii) Wire between two electric poles.

Ans. (i) Yes. A piece of elastic stretched to the breaking point.

(ii) No. Wire between two electric poles.

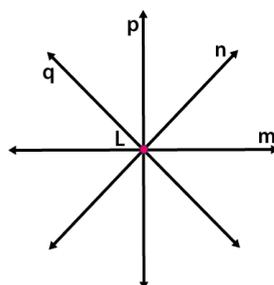
3. Mark any two points P and Q in your note book and draw a line passing through the points. How many lines can you draw passing through both the points?

Ans. Mark any two points P and Q in your note book and draw a line passing through the points. Only 1 line can pass through 2 points.



4. How many lines may pass through one given point, two given points, any three collinear points?

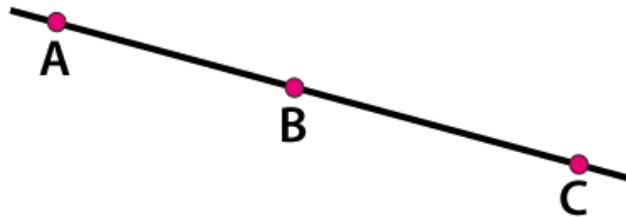
Ans. The lines that may pass through one given point are infinite.



The lines that may pass through two given points is only one.



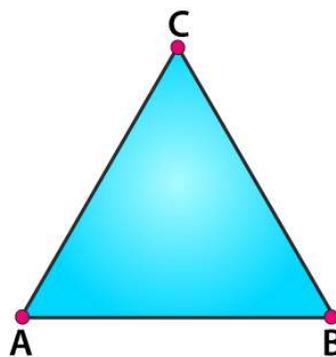
The lines that may pass through three collinear is one



5. Mark three non-collinear points A, B, and C in your notebook. Draw lines through these points taking two at a time. Name these lines. How many such different lines can be drawn?

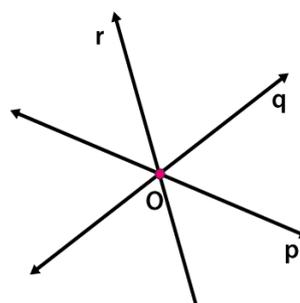
Ans. It is given that the three collinear points are A, B, and C

We know that three lines namely AB, BC, and AC can be drawn using these points.

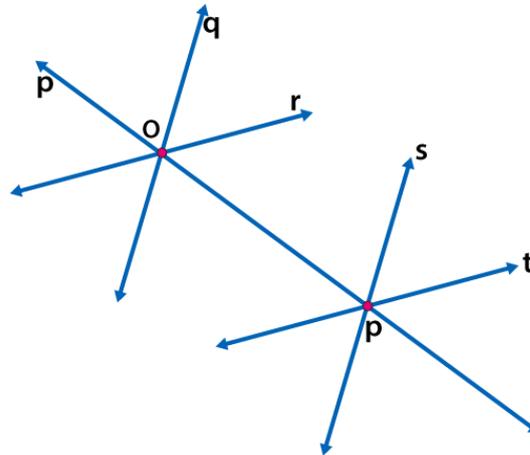


6. Lines p, q, and r are concurrent. Also, lines p, s, and t are concurrent. Is it always true that the lines q, r, and s will be concurrent? Is it always true for lines q, r, and t?

Ans. We know that the lines p, q, and r intersect at point O and are concurrent.



The lines p , s and t intersect at the common point and are concurrent. We know that it is not always true that the lines q , r , and s or q , r , and t are concurrent.



7. State which of the following statements are true (T) and which are false (F):

- (i) Point has a size because we can see it as a thick dot on the paper.
- (ii) By the term “lines” in geometry, we mean only straight lines.
- (iii) Two lines in a plane always intersect at a point.
- (iv) Any plane through a vertical line is vertical

Ans. (i) False (ii) True (iii) False (iv) True

8. Give the correct matching of the statements of Column A and Column B.

Column A

Column B

- | | |
|---|-------------------------------------|
| (i) Points are collinear | (a) may be parallel or intersecting |
| (ii) Line is completely known | (b) are undefined terms in geometry |
| (iii) Two lines in a plan | (c) if they lie on the same line |
| (iv) Relations between points and lines | (d) can pass through a point |
| (v) Three non-collinear points | (e) determine a plane |
| (vi) A plane extends | (f) are called incidence properties |
| (vii) Indefinite number of lines | (g) if two points are given |
| (viii) Point, line and plane are | (h) indefinitely in all directions |

Ans. Column A Column B

- | | |
|-------------------------------|----------------------------------|
| (i) Points are collinear | (c) if they lie on the same line |
| (ii) Line is completely known | (g) if two points are given |

- (iii) Two lines in a plan (a) may be parallel or intersecting
- (iv) Relations between points and lines (f) are called incidence properties
- (v) Three non-collinear points (e) determine a plane
- (vi) A plane extends (h) indefinitely in all directions
- (vii) Indefinite number of lines (d) can pass through a point
- (viii) Point, line and plane are (b) are undefined terms in geometry

9. Mark the following points on a sheet of paper. Tell how many line segments can be obtained in each case:

- (i) Two points A, B.
- (ii) Three non-collinear points A, B, C.

Ans. (i) Two points A, B.

So the number of line segments = $\frac{n(n-1)}{2} = \frac{2(2-1)}{2} = 1$

(ii) Three non-collinear points A, B, C.

So the number of line segments = $\frac{n(n-1)}{2} = \frac{3(3-1)}{2} = 3$

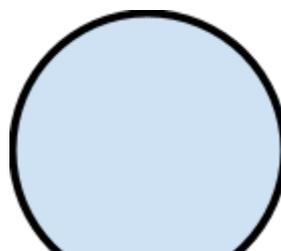
10. Draw rough diagrams to illustrate the following:

- (i) Open curve
- (ii) Closed curve

Ans. (i) Open curve



(ii) Closed curve



Mathematics

