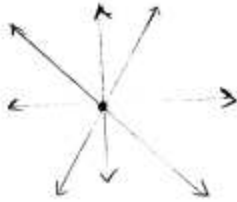


Basic Geometrical Concept

Exercise- 10.1.

Solution-01.



unlimited number of lines can be drawn through a single point

Solution-02:



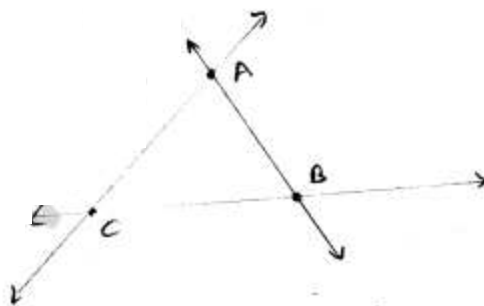
one line can be drawn through two distinct given points.

Solution-03:



one line can be drawn through three collinear points.

Solution-04:



Lines $\overleftrightarrow{AB}$, $\overleftrightarrow{BC}$ and $\overleftrightarrow{CA}$ [Three Lines can be drawn through 3 non collinear points.]

Solution-05:

(i) Five points are O, B, C, D, E

(ii) A Line $\overleftrightarrow{EF}$, more answers are possible

(iii) $\overrightarrow{OC}$, $\overrightarrow{OB}$, $\overrightarrow{EB}$, $\overrightarrow{DB}$;

more answers are possible.

(iv) $\overrightarrow{OB}$, $\overrightarrow{OC}$, $\overrightarrow{DE}$, $\overrightarrow{DO}$, $\overrightarrow{DB}$; more answers are possible

Solution-06:

(i) Line containing 'A' is $\overleftrightarrow{AE}$;

more answers are possible

(ii) Line passing through A is $\overleftrightarrow{AE}$

(iii) Line on which point O lies, $\overleftrightarrow{OC}$

(iv) Two pairs of intersecting Lines

$\overleftrightarrow{AE}$, $\overleftrightarrow{OC}$; $\overleftrightarrow{AE}$, $\overleftrightarrow{EF}$

Solution-07:

(i) collinear points are A, D, C, B, O, E.

(ii) concurrent Lines and their Point of concurrence
L, n, p
are B and m, p, q; Point A.

Solution-08

(i) Pairs of Parallel Lines

l, m

l, n

m, n.

(ii) All Pairs of intersecting Lines

$L, P;$

$m, P;$

$n, P;$

$L, q;$

$m, q;$

$n, q;$

$t, r;$

$m, r;$

$n, r;$

$P, q;$

$P, r;$

$q, r;$

(iii) Concurrent points are n, r, q .

(iv) collinear points are

$A, B, C;$

$A, H, I, D;$

$D, E, F, G;$

$C, I, E;$

$B, H, F.$

Solution - 09 :-

(i) Number of Line segments.

$\overline{AB}, \overline{BD}, \overline{AC}, \overline{AD}, \overline{BC}$ and $\overline{CD}$

(ii) Number of Line segments

$\overline{AB}, \overline{BC}, \overline{CD}, \overline{AD}, \overline{AE}, \overline{AC}, \overline{EC}, \overline{BE}, \overline{BD}$ and $\overline{ED}.$

(iii) Number of Line segments 8.

$\overline{AB}$, $\overline{BC}$, $\overline{CD}$, $\overline{AD}$, $\overline{AE}$, $\overline{BE}$, $\overline{CE}$ and $\overline{DE}$

Solution -10:-

(i) Rays whose initial points are A, B and C Respectively,

$\overrightarrow{AB}$, $\overrightarrow{AC}$, $\overrightarrow{AD}$, $\overrightarrow{AE}$; $\overrightarrow{BC}$, $\overrightarrow{BD}$, $\overrightarrow{BE}$, $\overrightarrow{CD}$, $\overrightarrow{CE}$, $\overrightarrow{CA}$, $\overrightarrow{CB}$
 $\overrightarrow{BA}$

(ii) No, AB ^{not} different from AD

(iii) No.

(iv) yes

(v) yes.

Solution -11:-

(i) True

(ii) True

(iii) True

(iv) False

(v) False

(vi) False

(vii) False

(viii) False

(ix) True

(x) False

(xi) True

Exercise -10.2

Solution-1:

(i) In the given figure there are '4' Angles.

$\angle A, \angle B, \angle C, \angle D$

Solution-02:

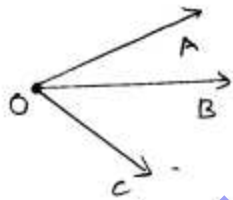
(i) A is the point interior of $\angle DOE$

(ii) A, D, C are exterior points of $\angle EOF$

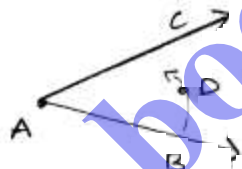
(iii) O, B, E, F are points on $\angle EOF$

Solution-03:

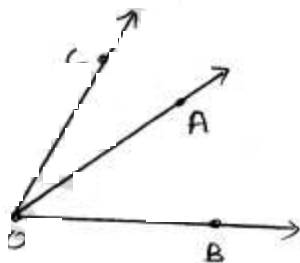
(i) one point in common 'O'



(ii) two points in common



(iii) one Ray in common



$\vec{OA}$ is common for $\angle COA$ & $\angle AOB$.

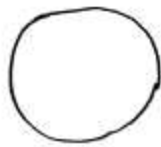
Exercise 10.3.

Solution 01:

(i) open simple curve



(ii) closed simple curves.



(iii) open curve that is not simple



(iv) closed curve that is not simple



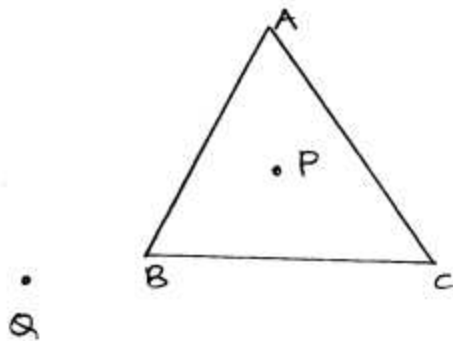
10) Solution -02:

(i) yes, It is a curve

(ii) yes, It is a closed curve

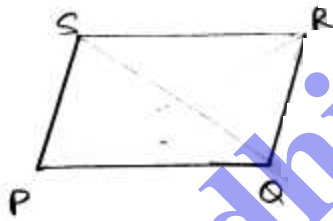
(iii) yes, It is a polygon

Solution - 03:



The point A is neither in the exterior nor in the interior of $\triangle ABC$. In fact, the point A lies on the boundary of $\triangle ABC$.

Solution 04:



it has two diagonals $\overleftrightarrow{PR}$, $\overleftrightarrow{QS}$.

Solution 05:-

(i) Yes

(ii) Yes

(iii) its diagonals are $\overline{AC}$ and $\overline{BD}$

(iv) diagonal $\overline{AC}$ is in the interior and diagonal $\overline{BD}$ is in the exterior of quadrilateral ABCD.

Solution - 06:-

- (i) $\overline{KL}$, $\overline{MN}$; $\overline{LM}$, $\overline{NK}$
- (ii) $\angle K$, $\angle M$; $\angle L$, $\angle N$
- (iii) $\overline{KL}$, $\overline{LM}$; $\overline{LM}$, $\overline{MN}$
- (iv) $\angle K$, $\angle L$; $\angle L$, $\angle M$.

Exercise - 10.4.

Solution - 01

- (i) The centre of the circle point O.
- (ii) three radii $\overline{OA}$, $\overline{OB}$, $\overline{OC}$
- (iii) a diameter $\overline{AC}$
- (iv) a chord $\overline{ED}$
- (v) interior points Q and P
- (vi) Point Q
- (vii) $\triangle OAB$ (Shaded portion)
- (viii) segment EFD (Shaded portion)

Solution - 02:

- (i) True
- (ii) False
- (iii) True
- (iv) True