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CLASS 6TH

MATHS

CHAPTER- 4th

Basic Geometrical Ideas

EXERCISE- 4.1

NCERT SOLUTION

1. Use the figure to name:
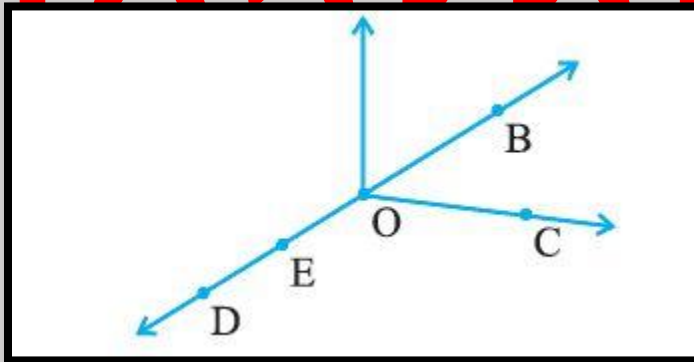
**(a) Five
points**
(b) A line
(c) Four rays
(d) Five line segments

Ans.
(a) Five Points = D, E, O, B and C

(b) A line = $\overleftrightarrow{DB}$ or $\overleftrightarrow{BD}$

(c) Four Rays = $\overrightarrow{OD}, \overrightarrow{OB}, \overrightarrow{OC}, \overrightarrow{OE}$

(d) Five line segment = $\overline{OE}, \overline{DE}, \overline{OD}, \overline{OB}, \overline{OC}$

2. Name the line given in all possible (twelve) ways, choosing only two letters at a time from the four given.

Ans.

$\overleftrightarrow{AB}$, $\overleftrightarrow{BC}$, $\overleftrightarrow{CD}$, $\overleftrightarrow{AC}$, $\overleftrightarrow{BD}$, $\overleftrightarrow{AD}$, $\overleftrightarrow{BA}$, $\overleftrightarrow{CB}$, $\overleftrightarrow{CA}$, $\overleftrightarrow{DC}$, $\overleftrightarrow{DB}$, $\overleftrightarrow{DA}$
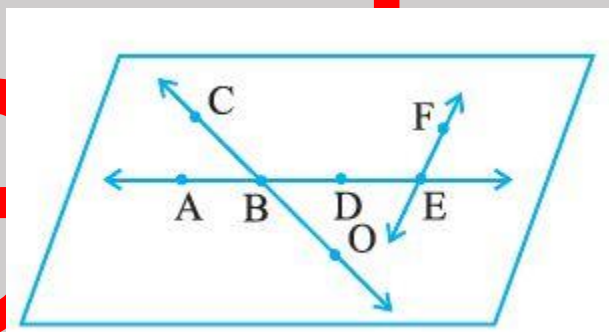
3. Use the figure to name:
(a) Line containing point E.
(b) Line passing through A.
(c) Line on which O lies
(d) Two pairs of intersecting lines.

Ans.

(a) Line containing point E.
Ans. $\overleftrightarrow{AE}$

(b) Line passing through A.
Ans. $\overleftrightarrow{AE}$

(c) Line on which O lies
Ans. $\overleftrightarrow{OC}$

(d) Two pairs of intersecting lines.
Ans. $\overleftrightarrow{AE}$, $\overleftrightarrow{OC}$ and $\overleftrightarrow{AE}$, $\overleftrightarrow{EF}$

4. How many lines can pass through (a) one given point? (b) Two given points?

Ans.

(a) One given point
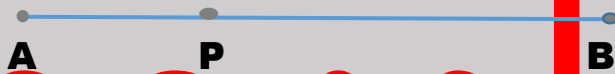
Ans. Countless line can pass through one given point.

(b) Two given points

Ans. Only One line can pass through two given points.

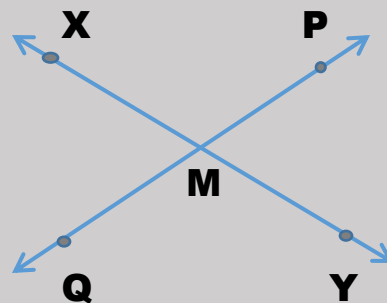**5. Draw a rough figure and label suitably in each of the following cases:**

(a) Point P lies on $\overline{AB}$.

Ans.

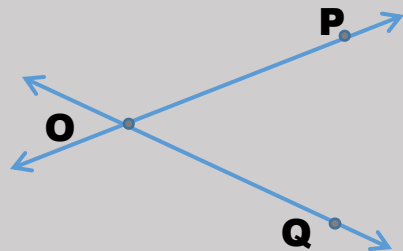**(b) XY and $\overleftrightarrow{PQ}$ intersect at M.**

Ans.

**(c) Line l contains E and F but not D.**

Ans.

(d) $\overleftrightarrow{OP}$ and $\overleftrightarrow{OQ}$ meet at O.

Ans.

6. Consider the following figure of line MN. Say whether following statements are true or false in context of the given figure.

(a) Q, M, O, N, P are points on the line MN.

(b) M, O, N are points on a line segment MN.

(c) M and N are end points of line segment MN.

(d) O and N are end points of line segment OP.

(e) M is one of the end points of line segment QO.

(f) M is point on ray OP.

(g) Ray OP is different from ray QP.

(h) Ray OP is same as ray OM.

(i) Ray OM is not opposite to ray OP.

(j) O is not an initial point of OP.

(k) N is the initial point of NP and NM.
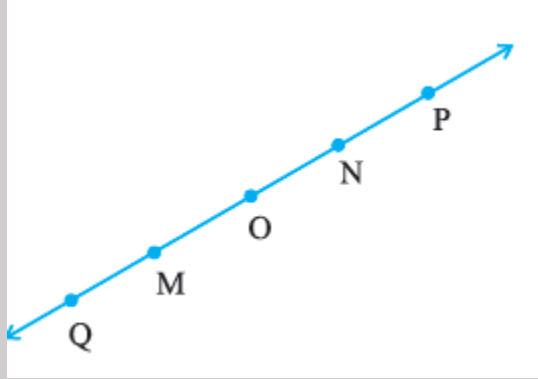
Ans.

(a) Q, M, O, N, P are points on the line MN.
Ans.
True

(b) M, O, N are points on a line segment MN.
Ans.
True

(c) M and N are end points of line segment MN.
Ans.
True

(d) O and N are end points of line segment OP.
Ans.
False

(e) M is one of the end points of line segment QO.
Ans.
False

(f) M is point on ray OP.
Ans.
False

(g) Ray OP is different from ray QP.
Ans.
True

(h) Ray OP is same as ray OM.
Ans.
False

(i) Ray OM is not opposite to ray OP.
Ans.
False

(j) O is not an initial point of OP.
Ans.
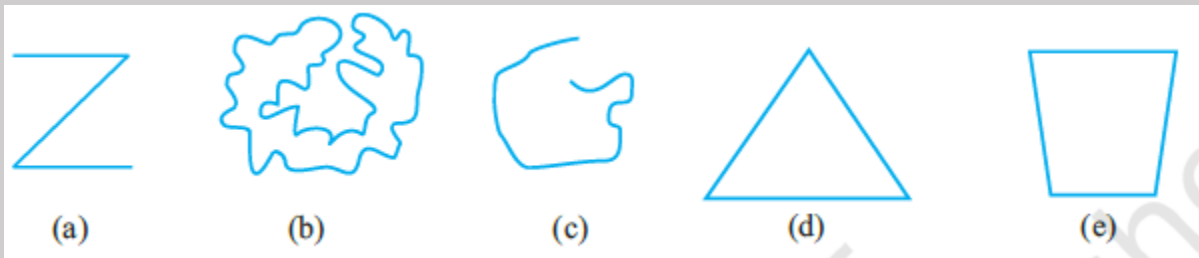False

(k) N is the initial point of NP and NM.
Ans.
True

EXERCISE- 4.2

NCERT SOLUTION

1. Classify the following curves as (i) Open or (ii) Closed.

(a)   (b)   (c)   (d)   (e)

Ans.
(a) Open

(b) Closed
(c) Open
(d) Closed
(e) Closed
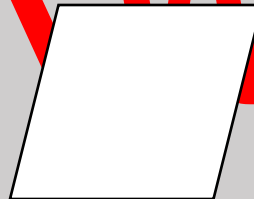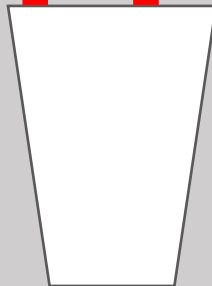
2. Draw rough diagrams to illustrate the following:
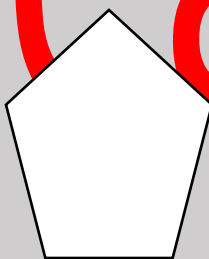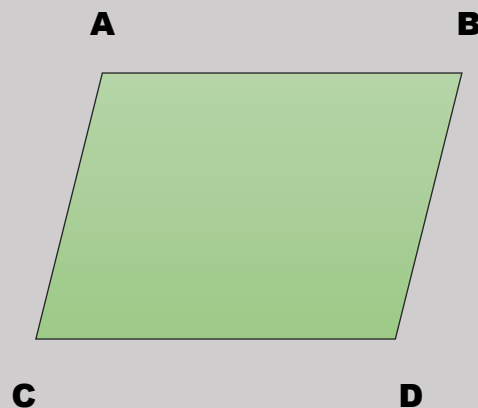**(a) Open curve (b) Closed curve.**

Ans.
(a) Open Curve

(b) Closed Curve

3. Draw any polygon and shade its interior.
Ans.

A   B

C   D

4. Consider the given figure and answer the questions :
(a) Is it a curve? (b) Is it closed?

Ans.

(a) Is it a curve

Ans.

Yes, it is a curve

(b) Is it closed

Ans.

Yes, it is closed

5. Illustrate, if possible, each one of the following with a rough diagram:
(a) A closed curve that is not a polygon.
(b) An open curve made up entirely of line segments.
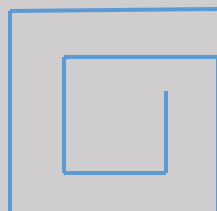**(c) A polygon with two sides.**

Ans.

(a) A closed curve that is not a polygon.
Ans.

(b) An open curve made up entirely of line segments
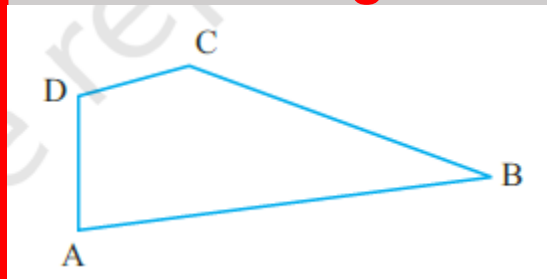
Ans.

(c) A polygon with two sides.

Ans.

No, it is not possible to create polygon with two sides.

EXERCISE- 4.3

NCERT SOLUTION
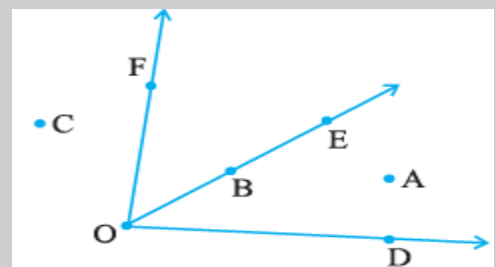
1. Name the angles in the given figure.

Ans.

∠ABC or ∠B **,** ∠ ACD or ∠C, ∠BAD or ∠A, ∠ADC or ∠D

2. In the given diagram, name the point(s)
(a) In the interior of ∠DOE
(b) In the exterior of ∠EOF
(c) On ∠EOF

Ans.

(a) A

(b) A, C, D

(c) E, B, O, F

3. Draw rough diagrams of two angles such that they have
(a) One point in common.
(b) Two points in common.
(c) Three points in common.
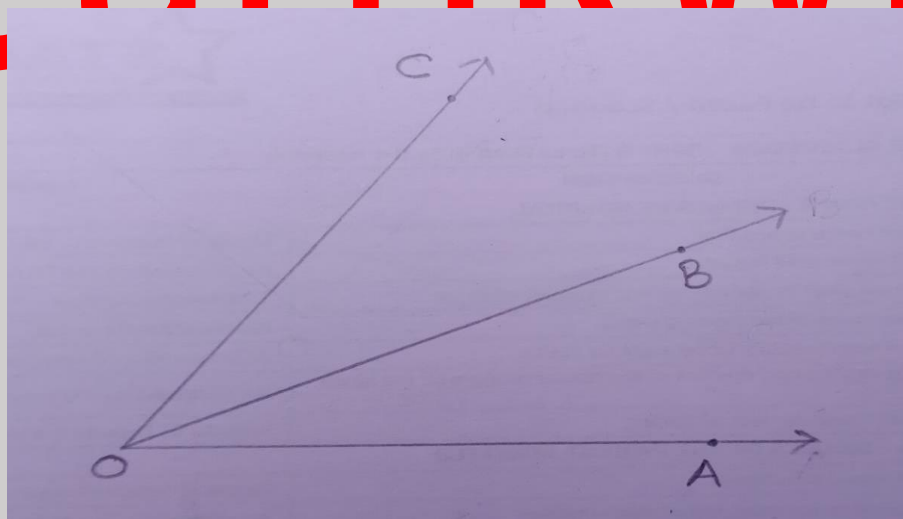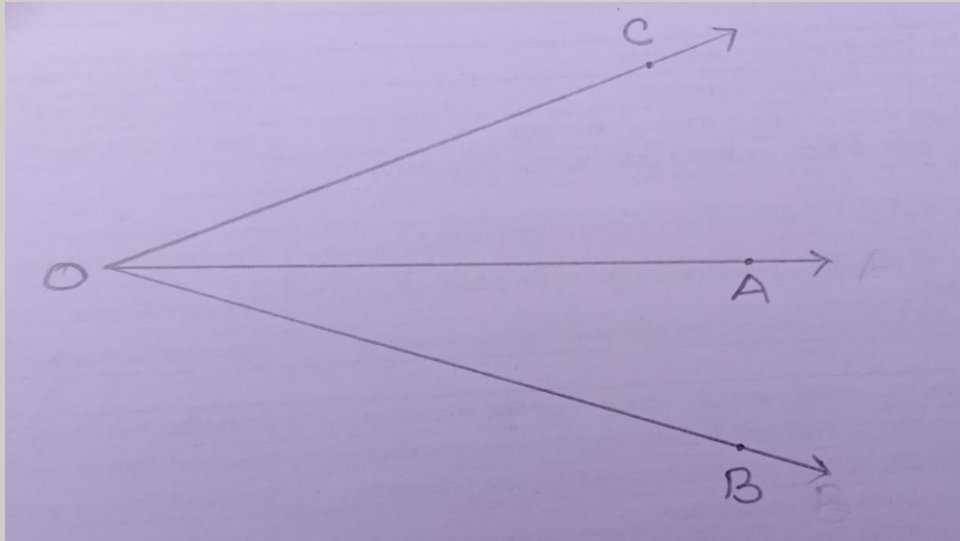(d) Four points in common.
(e) One ray in common.

Ans.

(a) One point in common

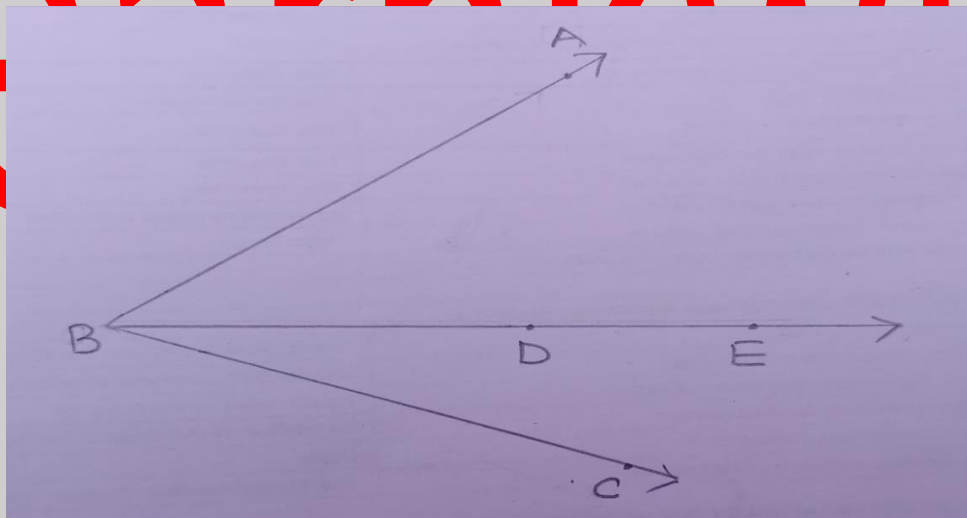O is the common point of $\angle AOB$ and $\angle BOC$.

(b) Two points in common.
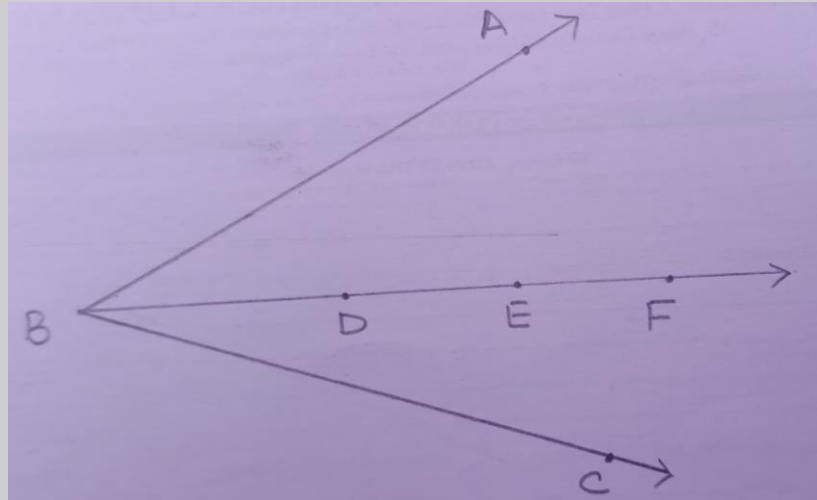O and B are common point of $\angle AOC$ and $\angle AOB$

(c) Three points in common.

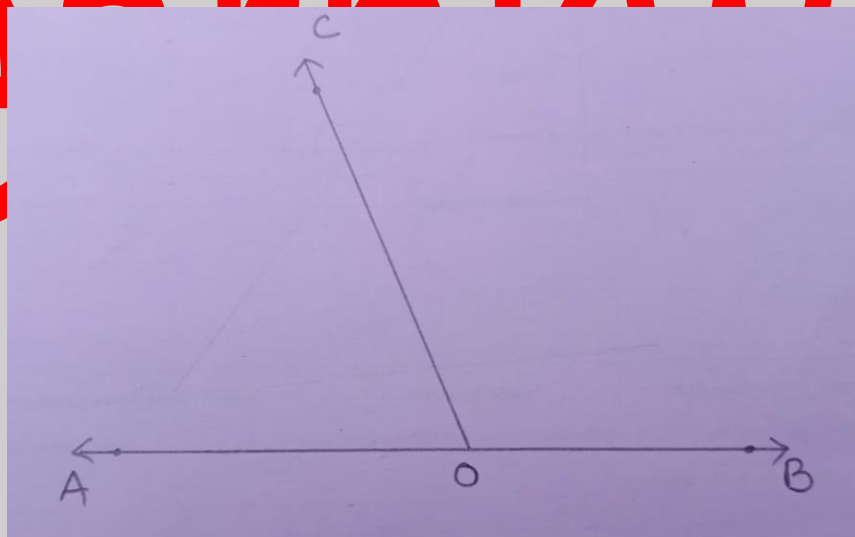B, D and E are the 3 common point of $\angle ABE$ and $\angle CBE$

(d) Four points in common.
B, D, E, F are 4 common point of $\angle ABF$ and $\angle CBF$

(e) One ray in common.

OC is the common ray of ∠*AOC* and ∠*BOC*

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