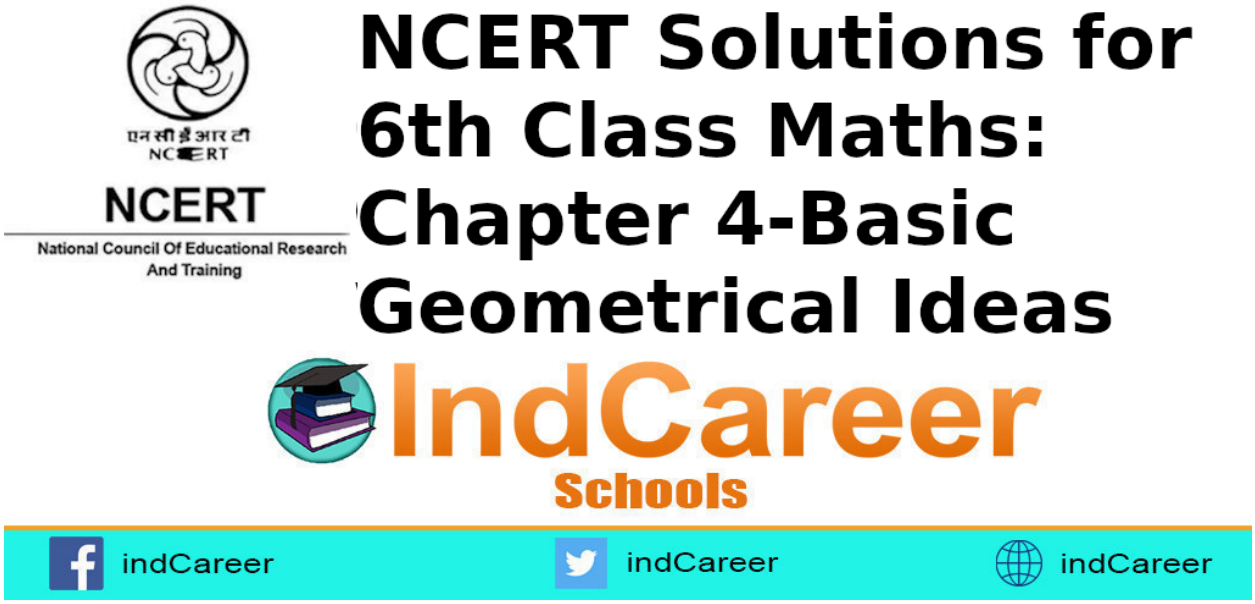

NCERT Solutions for 6th Class Maths: Chapter 4-Basic Geometrical Ideas

Class 6: Maths Chapter 4 solutions. Complete Class 6 Maths Chapter 4 Notes.

NCERT Solutions for 6th Class Maths: Chapter 4-Basic Geometrical Ideas

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Exercise 4.1

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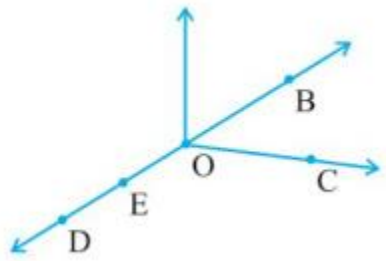
1. Use the figure to name:

(a) Five points

(b) A line

(c) Four rays

(d) Five line segments



Answer

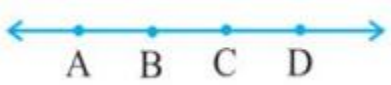
(a) In the given figure five points are B,O,E,D,C

b) $\overleftrightarrow{BD}$

c) $\overrightarrow{OD}$, $\overrightarrow{OB}$, $\overrightarrow{OC}$, $\overrightarrow{OE}$

d) $\overline{DE}$, $\overline{EO}$, $\overline{OB}$, $\overline{OC}$, $\overline{BE}$

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



Answer

$\overleftrightarrow{AB}, \overleftrightarrow{BC}$, $\overleftrightarrow{CD}$, $\overleftrightarrow{CB}, \overleftrightarrow{BA}$, $\overleftrightarrow{DC}, \overleftrightarrow{AD}$, $\overleftrightarrow{DA}$, $\overleftrightarrow{AC}$, $\overleftrightarrow{CA}, \overleftrightarrow{BD}$, $\overleftrightarrow{DB}$

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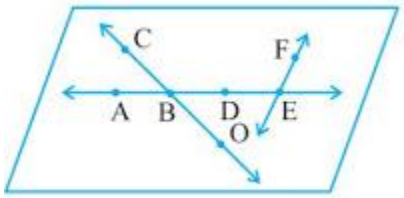
3. Use the figure to name:

(a) Line containing point E.

(b) Line passing through A.

(c) Line on which O lies

(d) Two pairs of intersecting lines.



Answer

a) $\overleftrightarrow{AB}$

b) $\overleftrightarrow{AE}$

c) $\overleftrightarrow{OC}$

d) $\overleftrightarrow{OC}$, $\overleftrightarrow{AE}$, $\overleftrightarrow{AE}$, $\overleftrightarrow{EF}$

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

Answer

(a) From a single point infinite line can pass.

(b) From two given points one line can pass through.

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

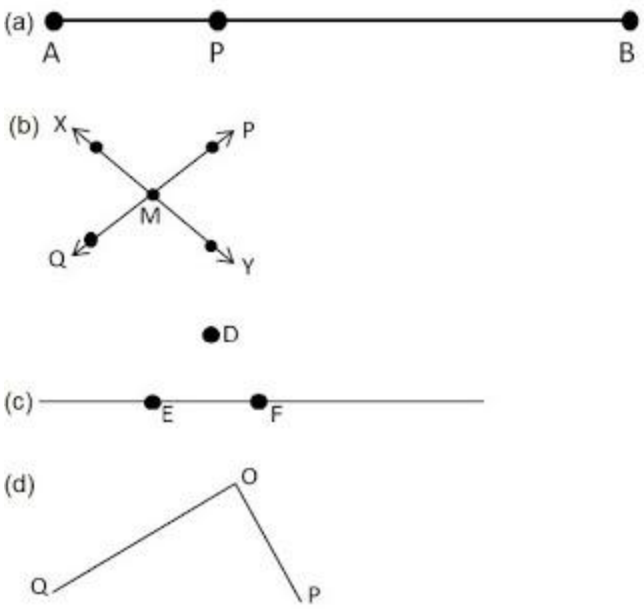
(a) Point P lies on $\overline{AB}$.

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

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

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

Answer


(a)
A
P
B
(b) X
P
M
Q
Y
D
(c)
E
F
(d)
O
Q
P

6. Consider the following figure of line $\overleftrightarrow{MN}$. 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 $\overleftrightarrow{MN}$.

(b) M, O, N are points on a line segment $\overline{MN}$.

(c) M and N are end points of line segment $\overline{MN}$.

(d) O and N are end points of line segment $\overline{OP}$.

(e) M is one of the end points of line segment $\overline{QO}$.

(f) M is point on ray $\overrightarrow{OP}$.

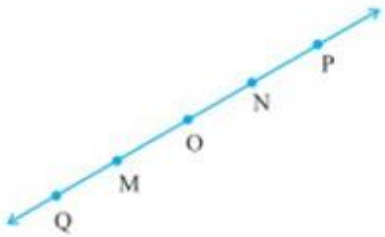
(g) Ray $\overrightarrow{OP}$ is different from ray $\overrightarrow{QP}$.

(h) Ray $\overrightarrow{OP}$ is same as ray $\overrightarrow{OM}$.

(i) Ray $\overrightarrow{OM}$ is not opposite to ray $\overrightarrow{OP}$.

(j) O is not an initial point of $\overrightarrow{OP}$.

(k) N is the initial point of $\overrightarrow{OP}$ and $\overrightarrow{OP}$.



Answer

(a) True

(b) True

(c) True

(d) False

(e) False

(f) False

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(g) True

(h) False

(i) False

(j) False

(k) True

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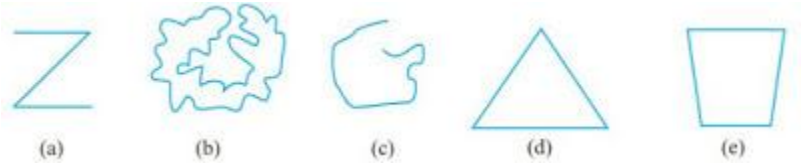
Exercise 4.3

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



Answer

(a) Open

(b) Closed

(c) Open

(d) Closed

(e) Closed

2. Draw rough diagrams to illustrate the following:

(a) Open curve

(b) Closed curve.

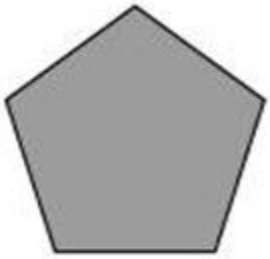
Answer

(a) 

(b) 

3. Draw any polygon and shade its interior.

Answer



4. Consider the given figure and answer the questions:

(a) Is it a curve?

(b) Is it closed?

Answer

(a) True

(b) True

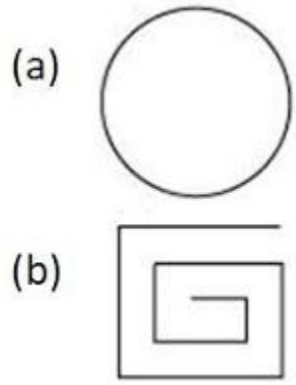
5. Illustrate, if possible, each one of the following with a rough diagram:

(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.

Answer



(c) This is not possible as the polygon having the least number of sides is a triangle, which has three sides in it.

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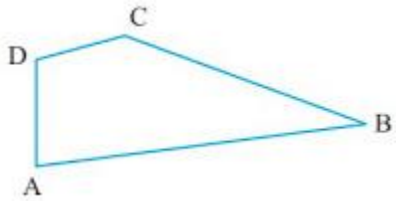
Exercise 4.3

1. Name the angles in the given figure.



Answer

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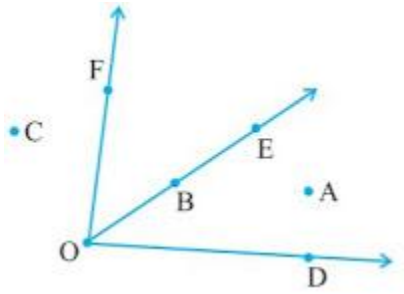
∠BAD, ∠DCB, ∠ADC, ∠CBA

2. In the given diagram, name the point(s)



(a) In the interior of ∠DOE

(b) In the exterior of ∠EOF

(c) On ∠EOF

Answer

(a) A

(b) C,A,D

(c) B,E,O,F

3. Draw rough diagrams of two angles such that they have

(a) One point in common.

(b) Two points in common.

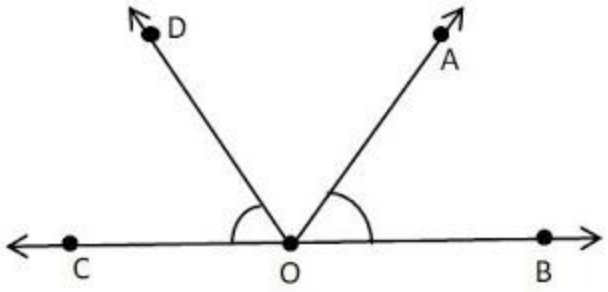
(c) Three points in common.

(d) Four points in common.

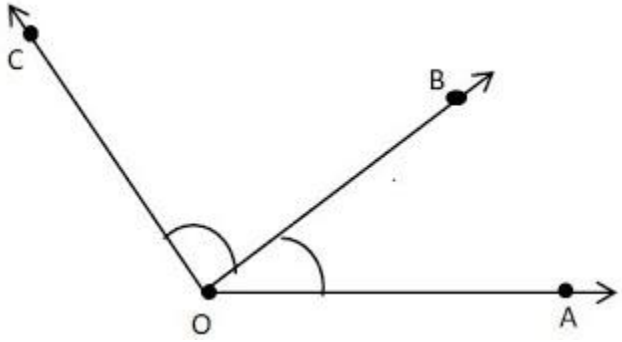
(e) One ray in common.

Answer

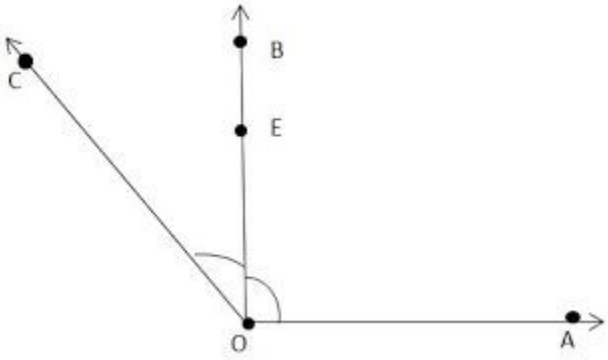
(a) ∠COD and ∠AOB have point O in common.



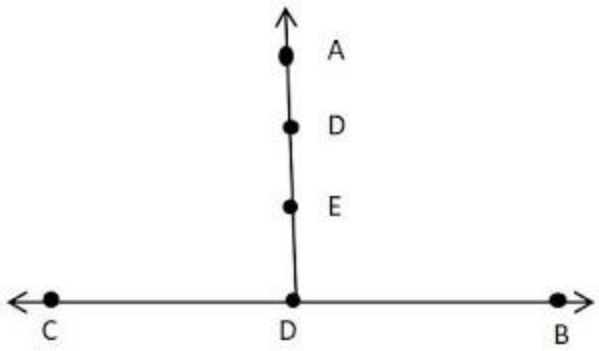
(b) ∠AOB and ∠BOC have points O and B in common.



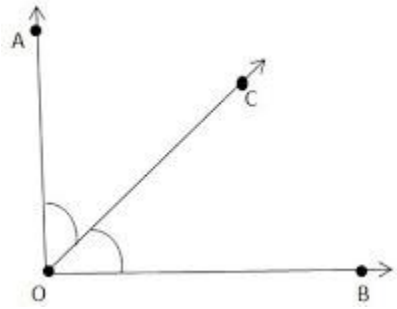
(c) ∠AOB and ∠BOC have points O, E, B in common.



(d) ∠BOA and ∠COA have points O, E, D, A in common.



(e) Ray OC is common between ∠BOC and ∠AOC.



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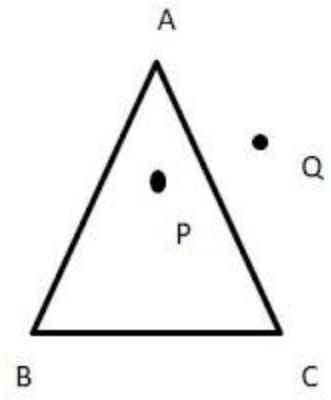
Exercise 4.4

1. Draw a rough sketch of a triangle ABC. Mark a point P in its interior and a point Q in its exterior. Is the point A in its exterior or in its interior?

Answer

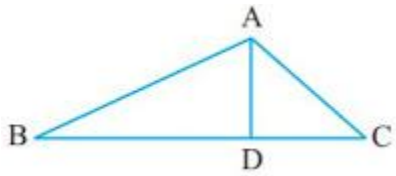


2. (a) Identify three triangles in the figure.

(b) Write the names of seven angles.

(c) Write the names of six line segments.

(d) Which two triangles have ∠B as common?



Answer

(a) ΔABC, ΔACD, ΔADB

(b) ∠ABC, ∠ADB, ∠ADC, ∠ACB, ∠BAD, ∠CAD, ∠BAC

(c) AB, BC, CA, AD, BD, CD

(d) ΔABD and ΔABC

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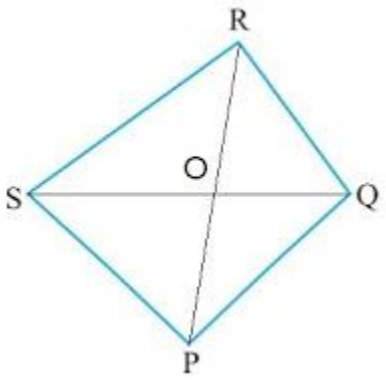
Exercise 4.5

1. Draw a rough sketch of a quadrilateral PQRS. Draw its diagonals. Name them. Is the meeting point of the diagonals in the interior or exterior of the quadrilateral?

Answer



Diagonal PR and diagonal SQ meet at O, which is inside the quadrilateral.

2. Draw a rough sketch of a quadrilateral KLMN. State,

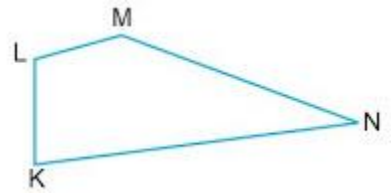
(a) two pairs of opposite sides,

(b) two pairs of opposite angles,

(c) two pairs of adjacent sides,

(d) two pairs of adjacent angles.

Answer



(a)Two pairs of opposite sides.

(b)Two pairs of opposite angles.

(c)Two pairs of adjacent sides.

(d)Two pairs of adjacent angles.

3. Investigate :

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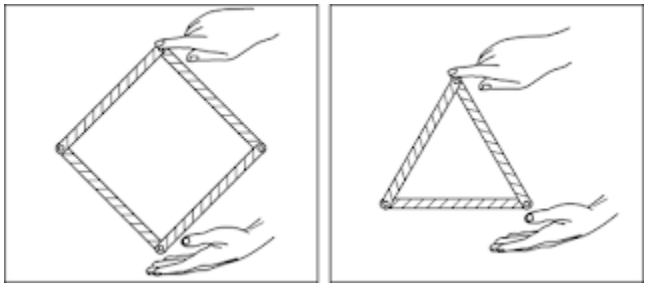
Use strips and fasteners to make a triangle and a quadrilateral.

Try to push inward at any one vertex of the triangle. Do the same to the quadrilateral.

Is the triangle distorted? Is the quadrilateral distorted? Is the triangle rigid? Why is it that structures like electric towers make use of triangular shapes and not quadrilaterals?

Answer



No, the triangle is not distorted but the quadrilateral is distorted.

Yes, the triangle is rigid.

Structures like electric towers make use of triangular shape as the structure of triangles are rigid and hence cannot be distorted.

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Exercise 4.6

1. From the figure, identify :

(a) the centre of circle

(b) three radii

(c) a diameter

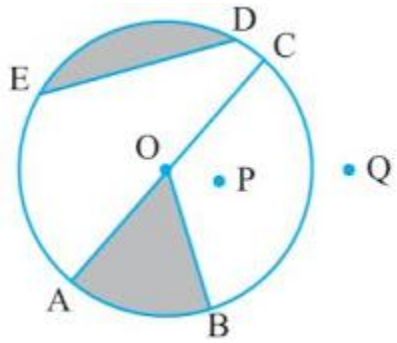
(d) a chord

(e) two points in the interior

(f) a point in the exterior

(g) a sector

(h) a segment



Answer

(a) O is the centre.

(b) Three radii are OA, OB and OC

(c) A diameter: AC

(d) A chord: ED

(e) Interior points: O, P

(f) Exterior point: Q

(g) A sector: OAB

(h) A segment: ED

2. (a) Is every diameter of a circle also a chord?

(b) Is every chord of a circle also a diameter?

Answer

(a) Yes, every diameter of a circle is also a chord.

(b) No, every chord of a circle is not a diameter.

3. Draw any circle and mark

(a) its centre

(b) a radius

(c) a diameter

(d) a sector

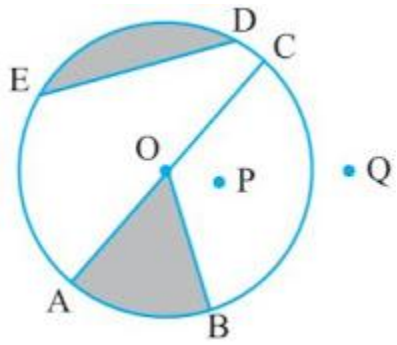
(e) a segment

(f) a point in its interior

(g) a point in its exterior

(h) an arc

Answer



(a) Centre: O

(b) A radius: OA

(c) A diameter: AC

(d) A sector: OAB

(e) A segment: ED

(f) A point in its interior: P

(g) A point in its exterior: Q

(h) An arc: DC

4. Say true or false: (a) Two diameters of a circle will necessarily intersect.

(b) The centre of a circle is always in its interior.

Answer

(a) True

(b) True

NCERT 6th Maths Chapter 4, class 6 Maths Chapter 4 solutions

Chapterwise NCERT Solutions for Class 6 Maths :

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