



MATHS

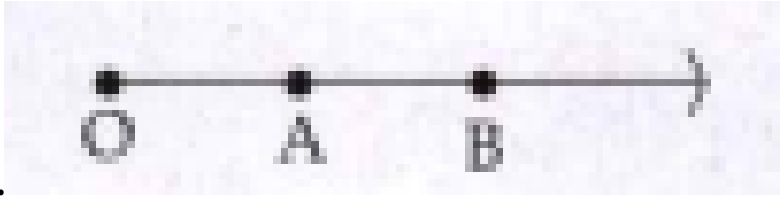
NCERT - NCERT MATHS(TELUGU)

BASIC GEOMETRICAL IDEAS

Exercise

1. Here is a ray \overrightarrow{OA} . It starts at O and passes through the point A. It also passes through the point B. Can you name it as \overrightarrow{OB} ? Why? Can you

write the ray \overrightarrow{OA} as \overrightarrow{AO} ? Why? Why not? Give



reasons.



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2. How many lines can be drawn through i) One point ii) Two distinct points. Make a rough figure for your answer.



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3. Which of the following has a definite length?

i) Line, ii) Point, iii) Line segment, iv) Ray.



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4. How many end points do the following have?

i) Line segment, ii) Ray, iii) Line.



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5. Write “True” or “False” A line has no end points,



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6. Write “True” or “False”: Ray is a part of a line,



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7. Write “True” or “False”: A line segment has no definite length,



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8. Write “True” or “False” A line segment has only one end point,



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9. Write “True” or “False” We can draw many lines through a point.



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10. Draw and Name: Line containing point P.



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11. Draw and Name: Line passing through R.



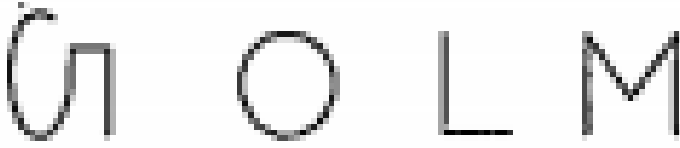
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12. Move your pencil along the following English letter and state which are open and

which

are

closed.



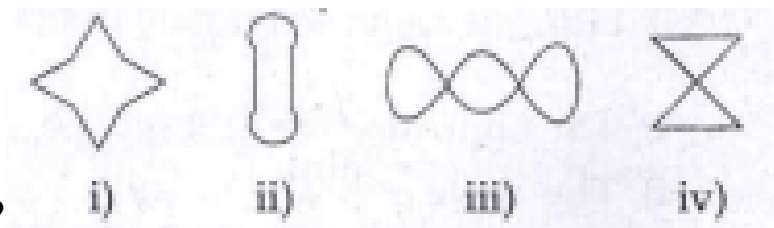
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13. Tell which letter is an example of simple curve.



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14. Identify which are simple curves and which

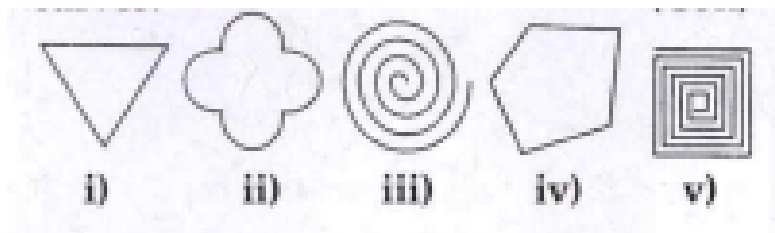


are not?



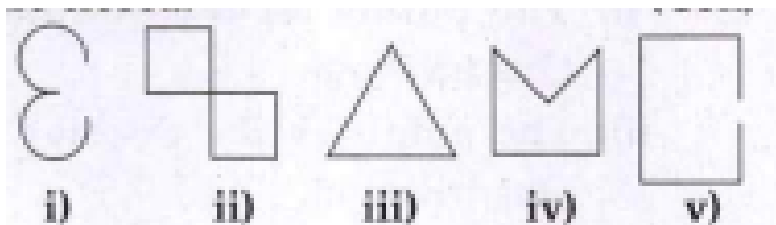
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15. Tick these figures which are simple curves.



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16. State which curves are open and which are

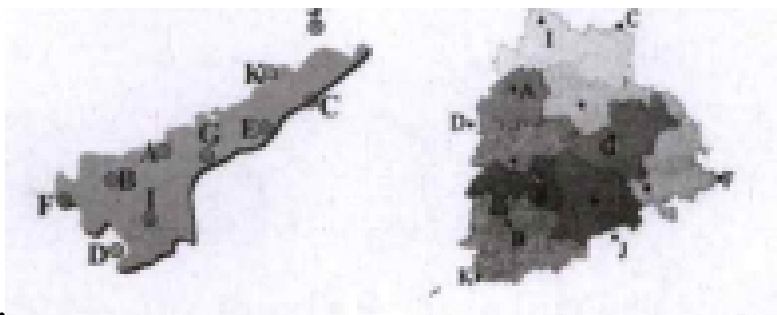


closed.



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17. Name the points that lie in the interior, on the boundary and in the exterior of the figure.



(AP & TS).



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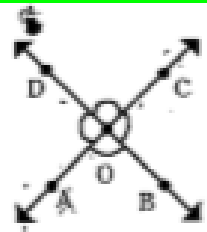
18. Draw three simple closed figures: i) by straight lines only ii) by straight lines and curved lines both.



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19. Name the angles, vertex and arms of the angles from the figure.

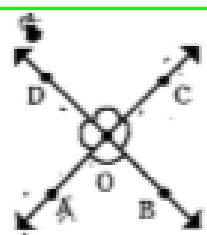
	i	ii	iii	iv	v
Angle	$\angle AOB$				
Vertex	O				
Arms	$\overrightarrow{OA}, \overrightarrow{OB}$				



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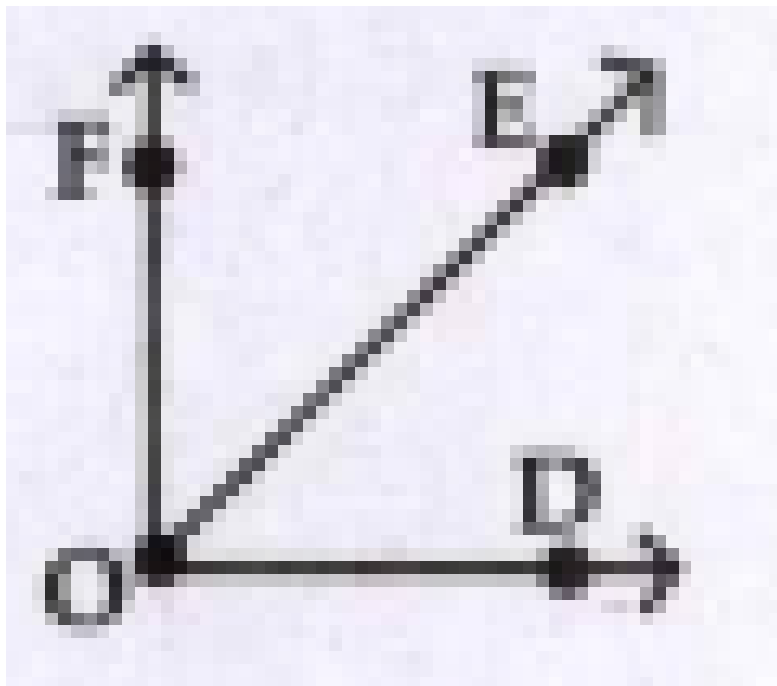
20. Name the angles, vertex and arms of the angles from the figure.

	i	ii	iii	iv	v
Angle	$\angle AOB$				
Vertex	O				
Arms	$\overrightarrow{OA}, \overrightarrow{OB}$				



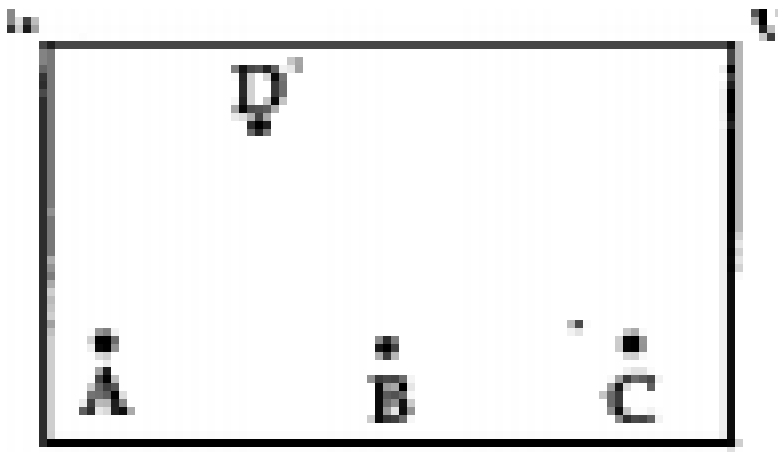
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21. Mark the angles formed in the figure.



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22. Take four points A, B, C and D such that A, B, C lie on the same line and D is not on it. Can the four line segments \overline{AB} , \overline{BC} , \overline{CD} , and \overline{AD} form a quadrilateral? Give reason.



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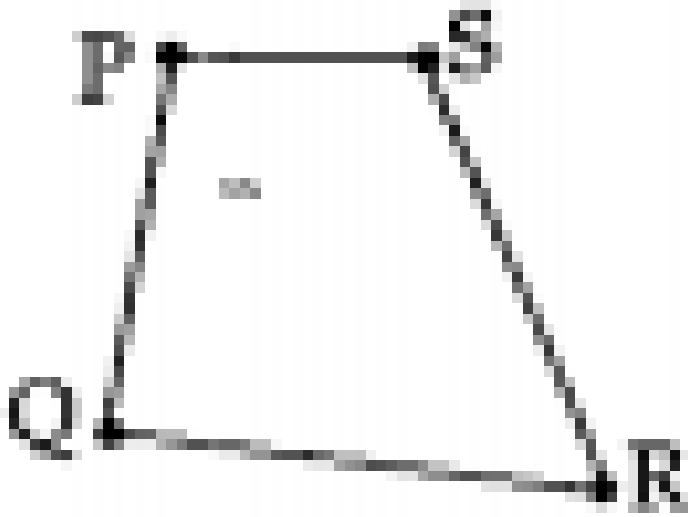
23. Mark any four points A, B, C and D. Join them to make a quadrilateral. Name it.



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24. PQRS is a Quadrilateral. Answer the following. i) The opposite side of R is _____, ii) The angle opposite to $\angle P$ is _____, iii) The adjacent sides of PQ are _____, iv) The adjacent angles of $\angle S$ are _____

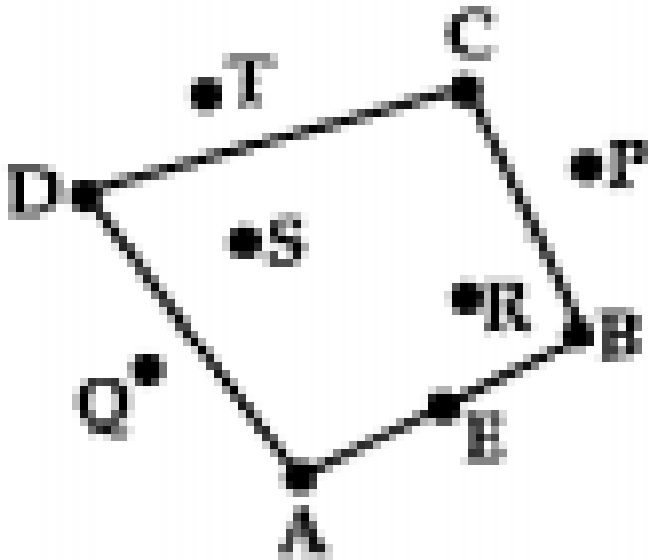
are _____.



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25. Name the points marked in the figure. i) The points in the interior of Quadrilateral. ii) The points on the boundary of Quadrilateral, iii)

The points in the exterior of the Quadrilateral.



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26. Draw a circle on a paper and cut it along its edge. Fold it into half and again fold it to one fourth to make folding marks as shown .You

will observe a point in the middle. Mark this O.

This is the centre of the circle. You can also indicate its radius. How many radii can you draw in a circle ?.




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27. Draw a circle and draw at least 5 chords in it .Make sure at least one of them passes through the centre . name them and fill the

table . What do you notice?

S.No	Chord	Length	Passes through the centre Yes/No
1	\overline{AB}	5	Yes
2	\overline{CD}	2.5	No
3	\overline{EB}	2	No
4	\overline{GH}	3.5	No
5	\overline{IJ}	2	No



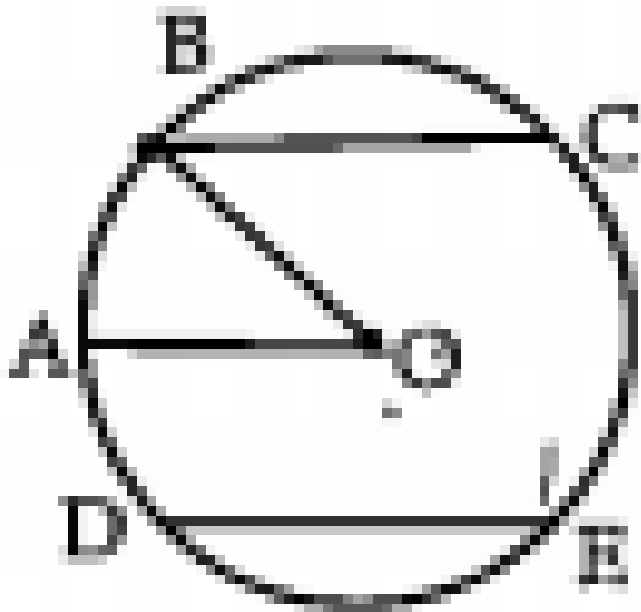
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28. Draw a circle and name its centre, a radius, a diameter and arc.



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29. Shade the regions in the circle. i) Sector with red, ii) Minor segment with yellow.



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30. Say “True” or “False”: We can locate only one center in a circle()



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31. Say “True” or “False”: Diameter is twice the radius (),



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32. Say “True” or “False”: An arc is a part of a circle(),



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33. Say “True” or “False”: All chords are equal in length(),



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34. All radii are not equal in length().



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35. Express each of the following decimals in the $\frac{p}{q}$ form

92.4



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36. State whether the following statements true or false. 1) There exists one end point to a ray, 2) A line has two end points, 3) An angle is the union of two rays with a single common

point, 4) The diameter of a circle divides it into two equal parts, 5) Every diameter of a circle is also called a chord of it.



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37. Fill in the blanks: If the centre and the end points of a diameter are on the same line, then the arc is called_____



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38. Fill in the blanks: The numbers of symmetric axis of a circle are _____



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39. Fill in the blanks: The triangle divides the plane into _____ sets of points



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40. Fill in the blanks: The diameter of a circle _____ to its radius.



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41. Fill in the blanks: Points lying on the same line are called _____



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42. Fill in the blanks: A line segment has _____end points.

A. One

B. Two

C. Three

D. None

Answer:



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43. _____ number of circles can be draw through 3 non-collinear points.

A. One

B. Two

C. Three

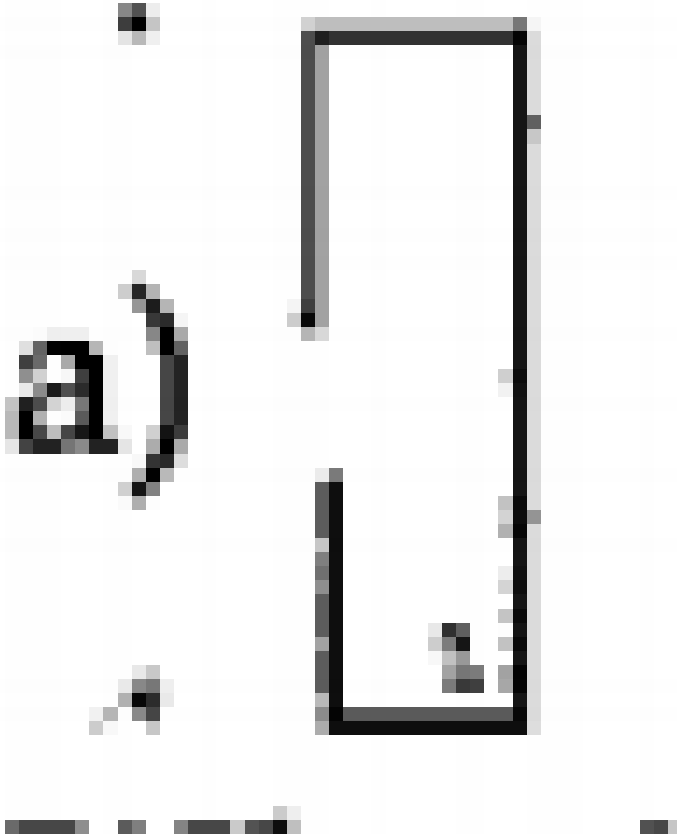
D. Many

Answer:

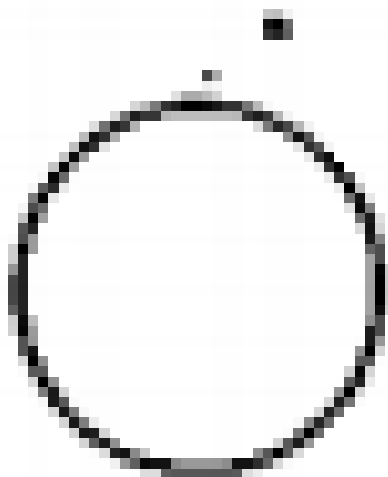


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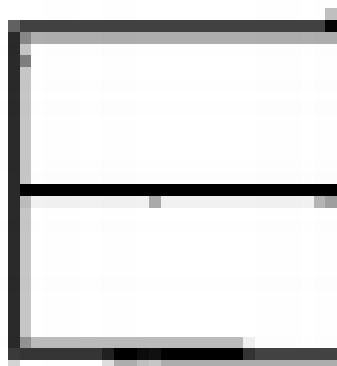
44. Which of the following figures are closed?



b)



c)





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45. What is the shape of full moon?

A. An arc

B. A semi -circle

C. Circle

D. A sector

Answer:



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46. If a circle is folded into one fourth, the shape we get is

A. A semi-circle

B. A triangle

C. An arc

D. A sector

Answer:



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47. Write the parts of a circle from the given

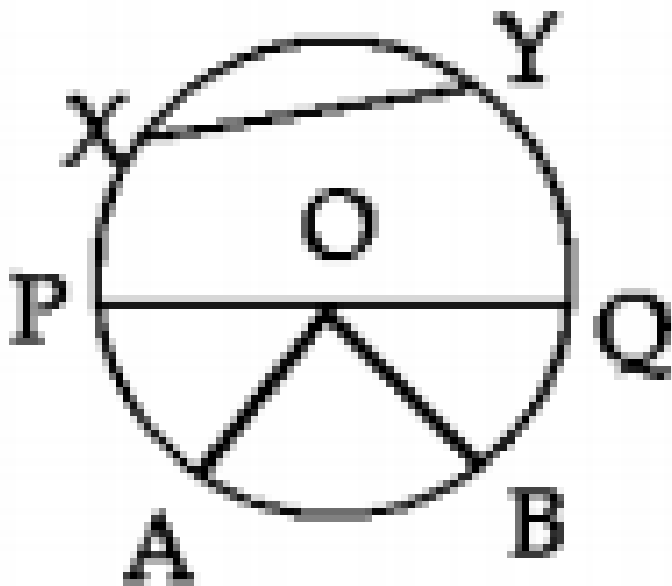
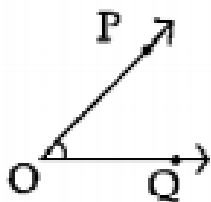


diagram.

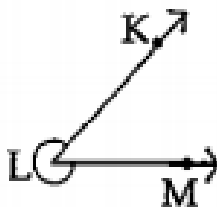


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48. Write the parts of the given angles.



ii)



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49. Select the figures which are simple curves?

i)



ii)



iii)



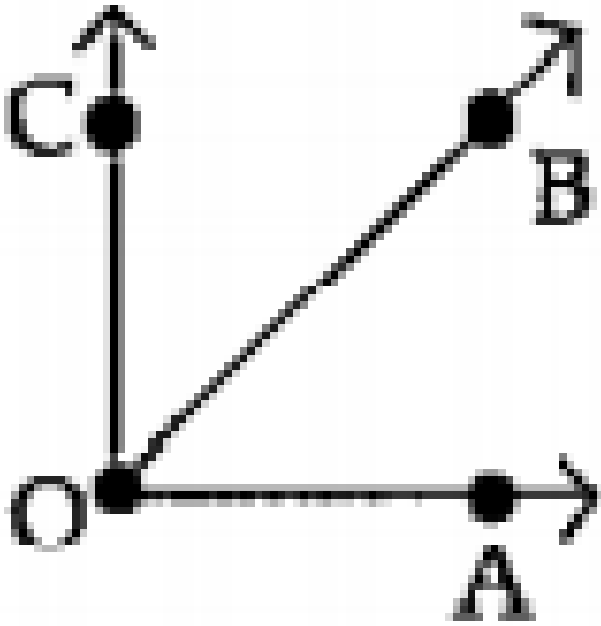
iv)



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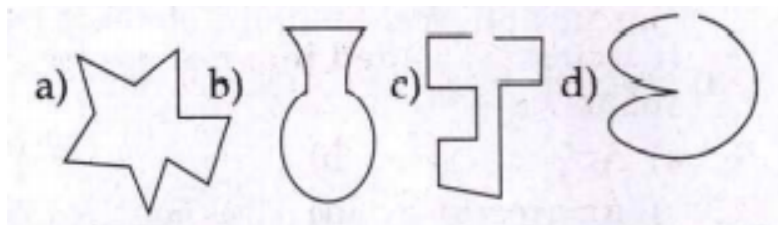
50. Mark the points in the figure which satisfy the below given conditions. i) P, Q are the interior of $\angle AOC$ but exterior of $\angle AOB$. ii) R

is the interior of angle AOB . iii) P is on $\angle AOB$.



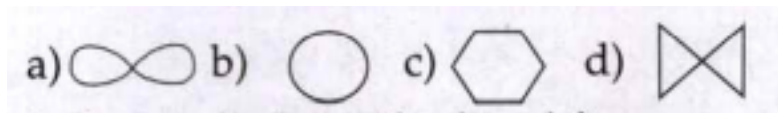
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51. Identify the closed and open figures from the figures given below



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52. Identify simple closed figures.



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53. Write all possible angles from the given

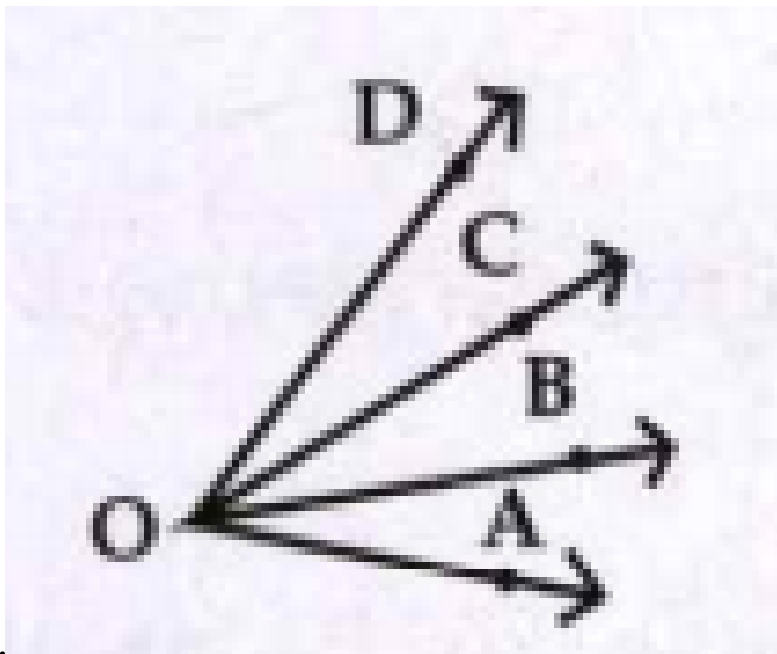
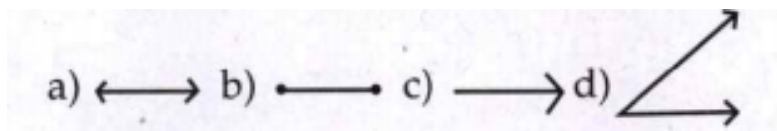


figure.



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54. Write the names of the following figures?

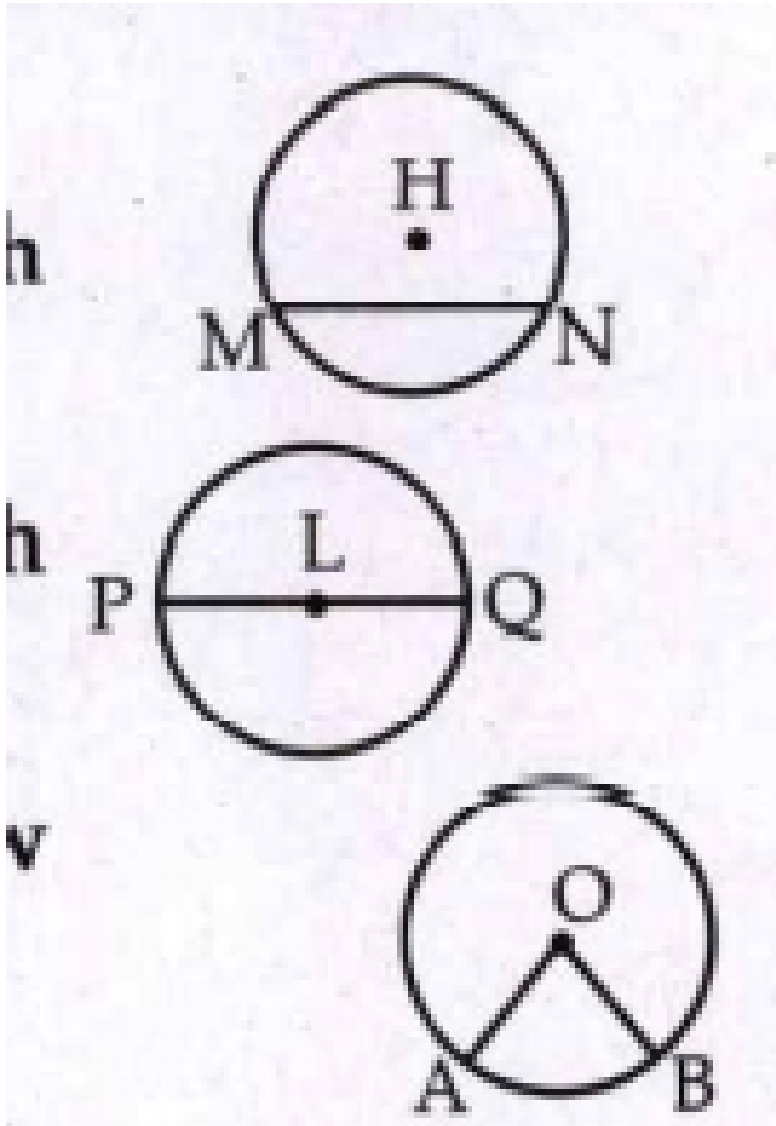


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55. Shade the different portions of a circle with colours? a) Minor segment with red colour, b) Semi – circle with green colour, c) Sector with

yellow

colour.



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56. KLMN is a Quadrilateral. Answer the following. i) Opposite angle to $\angle N$, ii) *Adjacent* angle K, iii) Opposite pair of sides, iv) Adjacent sides of LM.



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57. Locate the points in the circle in a correct region. a) O, A, D are in interior, b) P, Q are on the circle, c) X, Y Z are in the exterior.



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58. Draw a circle, and show the following parts in a circle. a) \overleftrightarrow{AB} diameter, b) \overleftrightarrow{XY} segment, c) OPQ sector, d) \overleftrightarrow{CD} chord.



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59. Draw angles with the following given parts?
a) I vertex, IJ and IK are the arms, b) X vertex, XZ and XY are the arms, c) Q vertex, PQ, RQ are the arms.



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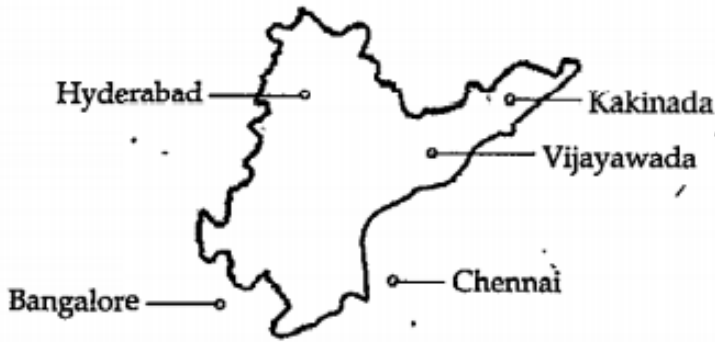
60. Draw a figure showing the following conditions. a) A,B,C are collinear points. b) A,D, C are non collinear points. c) Triangles formed by all these points.



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61. Locate the following places in A.P. map? a) Hyderabad, b) Bangalore, c) Chennai, d) Kakinada, E) Vijayawada. Which of the following

cities lie interior, exterior of A.P.



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62. Fill in the blanks : Points lying on the same line are called _____



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63. Fill in the blanks : A closed figure formed 3 line segments is called _____



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64. Fill in the blanks : _____ is a closed figure formed by an arc at the centre of the circle.



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65. Fill in the blanks : A circle has _____
no. of radii.



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66. Is it correct to say line AB as line BA? Why?



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67. A diameter (d) of a circle is twice the radius (r) of the circle?



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68. The line segment formed by two points A,B.



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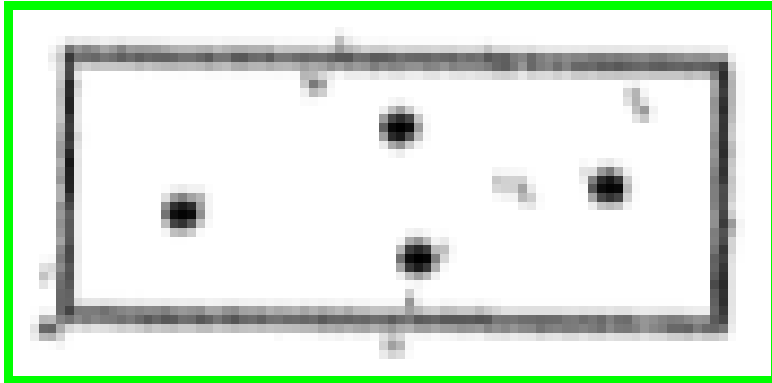
69. How many circles can be drawn through the
3 non-collinear points.



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Do This

1. Four points are marked in the given rectangle . Name them.



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2. What is the least number of sticks needed to form a closed figure ? Obviously three .can you

explain why two match sticks can not make a closed figure.



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3. Express each of the following decimals in the

$\frac{p}{q}$ form

71.25



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4. Draw a circle on a paper and cut it along its edge. Fold it into half and again fold it to one fourth to make folding marks as shown .You will observe a point in the middle. Mark this O. This is the centre of the circle. You can also indicate its radius. How many radii can you draw in a circle ?.



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5. Draw a circle and draw at least 5 chords in it.

Make sure at least one of them passes through the centre. Name them and fill the table.

S.No.	Chord	Length	Passes through the centre (Yes/No)
1.			
2.			
3.			
4.			
5.			

What do you notice ?



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6. Express each of the following decimals in the

$\frac{p}{q}$ form

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7. Draw a circle on a paper and cut it along its edge. Fold it into half and again fold it to one fourth to make folding marks as shown .You will observe a point in the middle. Mark this O. This is the centre of the circle. You can also indicate its radius.How many radii can you

draw in a circle ?.



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Try These

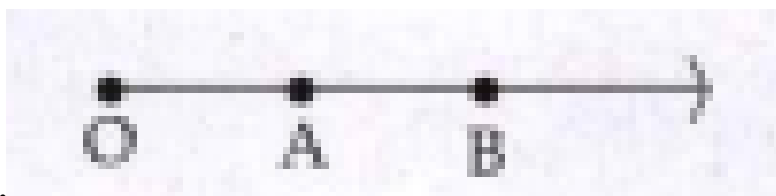
1. Identify which are simple curves and which are not ?



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Think Discuss And Write

1. Here is a ray \overrightarrow{OA} . It starts at O and passes through the point A. It also passes through the point B. Can you name it as \overrightarrow{OB} ? Why? Can you write the ray \overrightarrow{OA} as \overrightarrow{AO} ? Why? Why not? Give

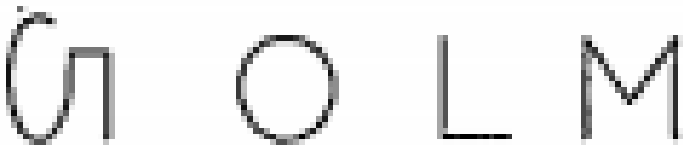


reasons.



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2. Move your pencil along the following English letter and state which are open and which are

closed.  The image shows four hand-drawn letters: 'G', 'O', 'L', and 'M'. 'G' is an open curve that starts at the top, goes down and around, and ends with a small hook. 'O' is a closed circle. 'L' is a simple open shape made of two perpendicular line segments. 'M' is a closed shape made of four line segments.



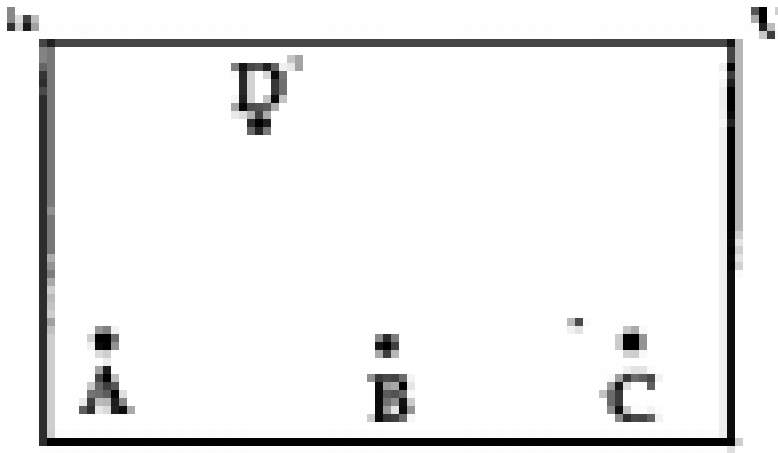
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3. Tell which letter is an example of simple curve.



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4. Take four points A, B, C and D such that A, B, C lie on the same line and D is not on it. Can the four line segments \overline{AB} , \overline{BC} , \overline{CD} , and \overline{AD} form a quadrilateral? Give reason.



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5. Is it possible to draw more than one diameter in a circle? Are all the diameters equal in length ?



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Exercise 4 1

1. Join the points given below. Name the line segments so formed in the figure.





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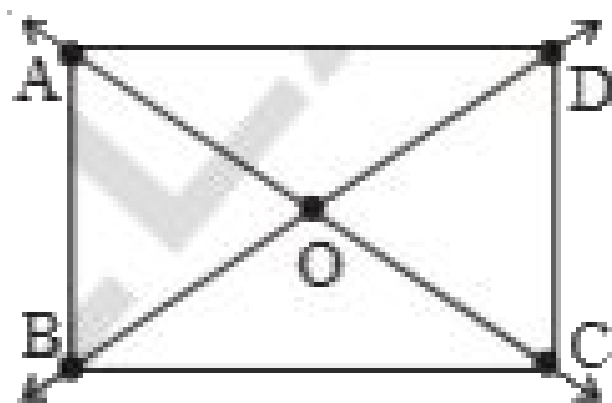
2. Name the following from the figure.

i. Any five points

ii. Any five line segments

iii. Any Three rays

iv. Any two lines



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3. How many lines can be drawn through

i. One point ii. Two distinct points

Make a rough figure for your answer.



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4. Which of the following has definite length?



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5. How many end points do the following have?

i. Line segment ii. Ray iii. Line



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6. Write 'True' or 'False'.

A line has no end points.



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7. Write 'True' or 'False'.

Ray is a part of a line



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8. Write 'True' or 'False'.

A line segment has no definite length.



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9. Write “True” or “False” A line segment has only one end point,



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10. Write 'True' or 'False'.

We can draw many lines through a point.



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11. Draw and name:

Line containing point P.



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12. Draw and name:

Line passing through R.



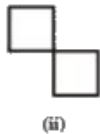
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1. Tick these figures which are simple curves.



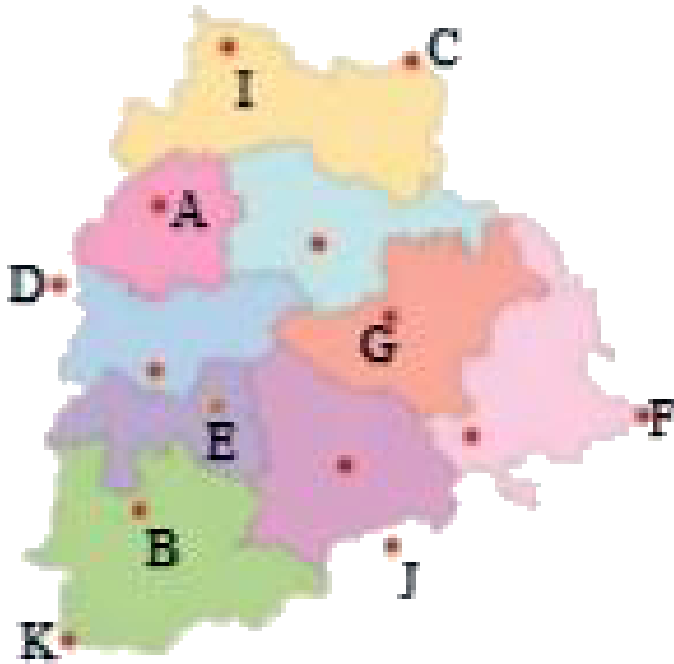
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2. State which curves are open and which are closed.



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3. Name the points that lie in the interior, on the boundary and in the exterior of the figure.



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4. Draw three simple closed figures: i) by straight lines only ii) by straight lines and curved lines both.

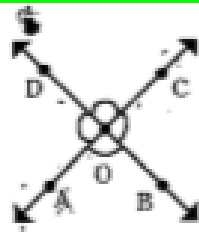


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Exercise 4 3

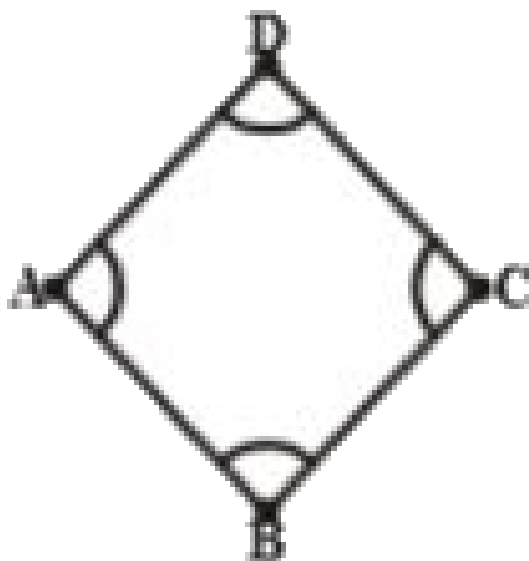
1. Name the angles, vertex and arms of the angles from the figure.

	i	ii	iii	iv	v
Angle	$\angle AOB$				
Vertex	O				
Arms	$\overrightarrow{OA}, \overrightarrow{OB}$				



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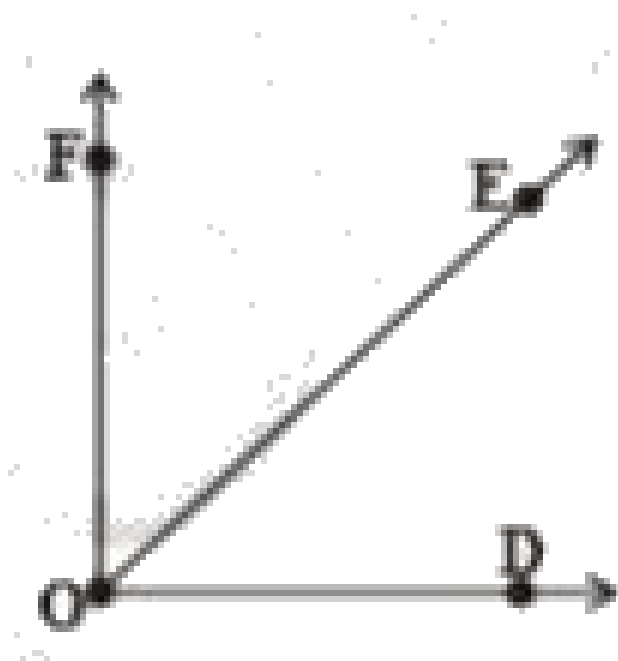
2. Name the angles formed in the figure.





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3. Mark the points in the figure which satisfy all the three conditions.



(i) A, B in the interior of $\angle DOE$.

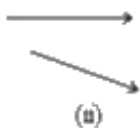
(ii) A, C in the exterior of $\angle EOF$.

(iii) B on $\angle DOE$.



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4. In which of the following figures, angles are formed ?



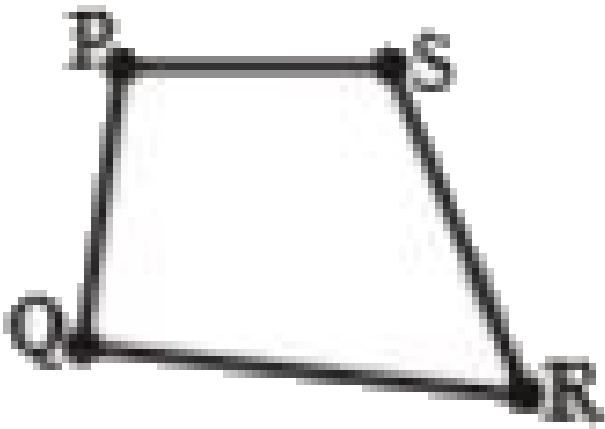
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1. Mark any four points A, B, C and D. Join them to make a quadrilateral. Name it.



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2. PQRS is a Quadrilateral. Answer the following.

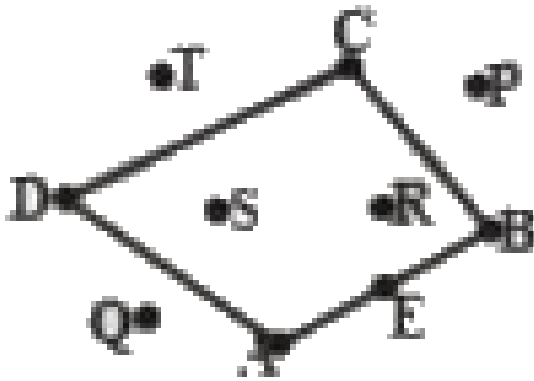


- i. The opposite side of QR is _____.
- ii. The angle opposite to $\angle P$ is _____.
- iii. The adjacent sides of PQ are _____
- iv. The adjacent angles of $\angle S$ are _____



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3. Name the points marked in the figure.



- i. The points in the interior of Quadrilateral.
- ii. The points on the boundary of Quadrilateral.
- (iii) The points in the exterior of the Quadrilateral.



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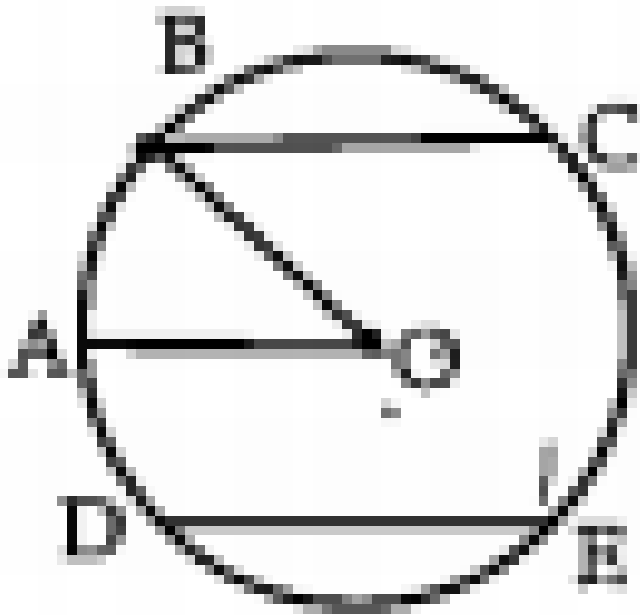
Exercise 4 5

1. Draw a circle and name its centre, a radius, a diameter and arc.



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2. Shade the regions in the circle. i) Sector with red, ii) Minor segment with yellow.



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3. Say 'True' or 'False'

i. We can locate only one centre in a circle.

ii. Diameter is twice the radius.

iii. An arc is a part of a circle.



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4. A plane is flying at the height of 5000 m above the sea level. At a particular point, it is exactly above a submarine flowing 1200 m below the sea level. What is the vertical distance between them?



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Exercise 4 1

1. How many lines can be drawn through

i. One point ii. Two distinct points

Make a rough figure for your answer.



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2. Which of the following has a definite length?

i) Line

(ii) Point

(iii) line segment

(iv) Ray



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3. How many end points do the following have?

i. Line segment ii. Ray iii. Line



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4. How many end points do the following have?

i. Line segment ii. Ray iii. Line



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5. How many end points do the following have?

i. Line segment ii. Ray iii. Line



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6. Write 'True' or 'False'.

A line has no end points.



Watch Video Solution

7. Write 'True' or 'False'.

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Watch Video Solution

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Watch Video Solution

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10. Write 'True' or 'False'.

We can draw many lines through a point.



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11. Draw and name:

Line containing point P.



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12. Draw and name:

Line passing through R.



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Exercise 4 2

1. Draw three simple closed figures: i) by straight lines only ii) by straight lines and curved lines both.



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Exercise 4 4

1. Mark any four points A, B, C and D. Join them to make a quadrilateral. Name it.



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Exercise 4 5

1. Draw a circle and name its centre, a radius, a diameter and arc.



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[Watch Video Solution](#)

2. Say “True” or “False”: We can locate only one center in a circle()



[Watch Video Solution](#)

3. Say “True” or “False”: Diameter is twice the radius (),



[Watch Video Solution](#)

4. Say “True” or “False”: An arc is a part of a circle(),



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5. Say “True” or “False”: All chords are equal in length(),



Watch Video Solution

6. All radii are not equal in length().



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7. Express each of the following decimals in the

$\frac{p}{q}$ form

60.155

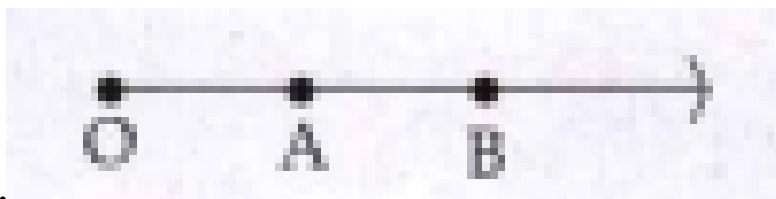


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Think Discuss And Write

1. Here is a ray \overrightarrow{OA} . It starts at O and passes through the point A. It also passes through the

point B. Can you name it as \overline{OB} ? Why? Can you write the ray \overline{OA} as \overline{AO} ? Why? Why not? Give



reasons.



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2. Tell which letter is an example of simple curve.



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Think And Discuss

1. Is it possible to draw more than one diameter in a circle? Are all the diameters equal in length ?



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