6
Basic Geometrical Ideas

6th Standard

Mathematics

Exam Time : 00:01:00 Hrs

Total Marks : 1

24 x 1 = 24

1) How many points are marked in the following figure?

(a) 1   (b) 2   (c) 3   (d) 4

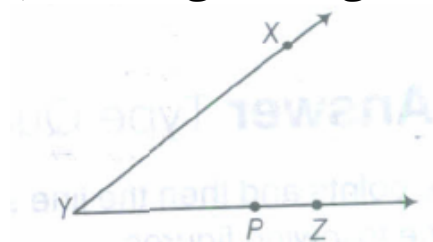2) Number of lines passing through five points such that no three of them are collinear, is

(a) 10   (b) 5   (c) 20   (d) 8

3) The number of circles that can be drawn with a given centre is

(a) 2   (b) 3   (c) 4   (d) Infinite

4) Which of the following has two end points?

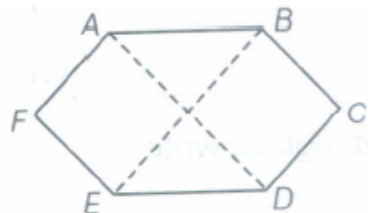(a) Ray   (b) Line   (c) Line segment   (d) None of the above

5) In the given figure, $\angle XYZ$ cannot be written as

(a) $\angle Y$ (b) $\angle ZXY$ (c) $\angle ZYX$ (d) $\angle XYP$

6) Which of these is an example for a pair of these parallel lines?

(a) Corner of a room   (b) Railway track   (c) Sides of a triangle   (d) Surface of a ball

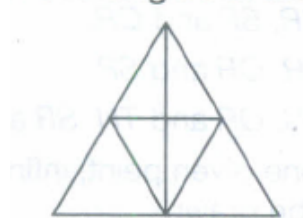7) Which of the following are the diagonals of the given polygon?

(a) AD and BE   (b) AFand FE   (c) BC and ED   (d) AB and ED

8) The least number of line segment required to make a polygon is

(a) 1   (b) 2   (c) 3   (d) 5
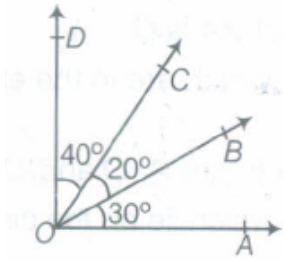
9) The number of triangles in the given figure are

(a) 10   (b) 12   (c) 13   (d) 14

10) Which of the following is not a polygon?

(a) Triangle   (b) Rectangle   (c) Pentagon   (d) Circle
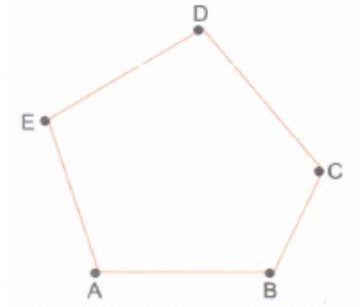
11) The number of angles in the given figure are

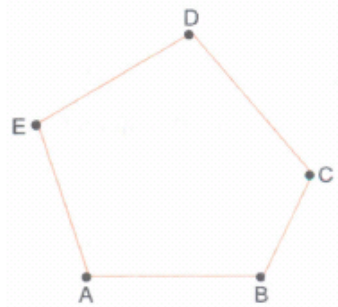(a) 3 (b) 4 (c) 5 (d) 6

12) Two intersecting lines intersect in

(a) 1 point (b) 2 points (c) 3 points (d) 4 points.

13) How many vertices are there in the following figure?
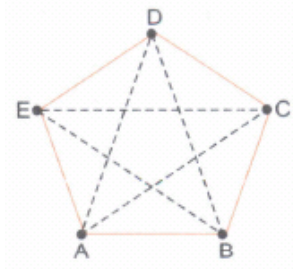

(a) 5 (b) 3 (c) 2 (d) 4

14) How many sides are there in the following figure?

(a) 5 (b) 4 (c) 2 (d) 3

15) How many diagonals are there in the following figure?

(a) 4 (b) 5 (c) 2 (d) 3

16) How many sides are there in a triangle?

(a) 1 (b) 2 (c) 3 (d) 4

17) How many angles are there in a triangle?

(a) 1 (b) 2 (c) 3 (d) 4

18) How many vertices are there in a quadrilateral?

(a) 1 (b) 2 (c) 3 (d) 4

19) How many sides are there in a quadrilateral?

(a) 1 (b) 2 (c) 3 (d) 4

20) How many angles are there in a quadrilateral?

(a) 1 (b) 2 (c) 3 (d) 4

21) How many pairs of adjacent sides are there in a quadrilateral?

(a) 1 (b) 2 (c) 3 (d) 4

22) How many pairs of opposite angles are there in a quadrilateral?

(a) 1 (b) 2 (c) 3 (d) 4

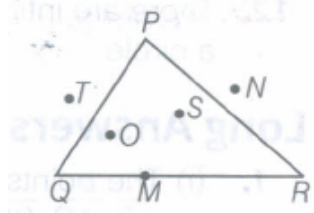23) How many pairs of opposite sides are there in a quadrilateral?

(a) 1 (b) 2 (c) 3 (d) 4

24) How many pairs of adjacent angles are there in a quadrilateral?

 (a) 1   (b) 2   (c) 3   (d) 4

<div align="right">11 x 1 = 11</div>
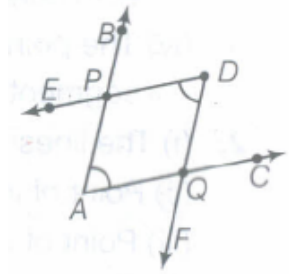
25) In the given figure, points lying in the interior of the $\triangle PQR$ are_____that in
  the exterior are_____and that on the triangle itself are_____.

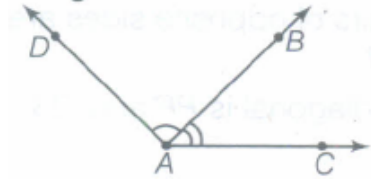26) The radius of a circle is_____of its diameter.

27) Diameter of a circle is_____chord.

28) The number of common points in the two angles marked in the given figure
  is_____.

29) All the radii of a circle are_____.

30) _____number of diameter can be drawn in a circle.

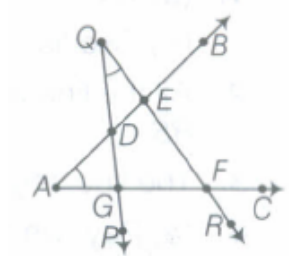31) The common part between the two angles BAC and DAB in figure is_____.

32) Two lines intersect at_____point.

33) A quadrilateral has_____sides.

34) A triangle has_____vertices.

35) The number of common points in the two angles marked in the given figure
  is_____.

<div align="right">24 x 1 = 24</div>

36) Two diameters of a circle will necessarily intersect.

 (a) False   (b) True

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

 (a) False   (b) True

38) Two non-parallel Ilne segments will intersect.

 (a) True   (b) False

39) Two parallel lines meet each other at same point.

 (a) True   (b) False

40) Many lines can pass through two given points

 (a) True   (b) False

41) Two angles have exactly one common arm.

 (a) False   (b) True

42) A circle has only one centre.

 (a) False   (b) True

43) In any triangle, number of line segments are three.

 (a) False   (b) True

44) A line has end point.

 (a) True   (b) False

45) A simple curve is one that does not cross itself.
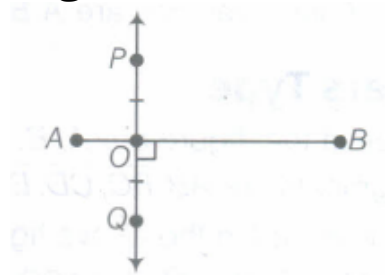
 (a) False   (b) True

46) A curve is said to be closed, if its end are not joined.

 (a) True   (b) False

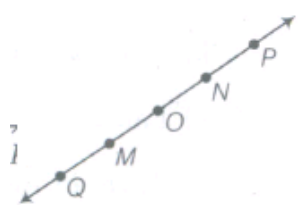47) An angle is made up of two rays starting from a common end point.

 (a) False   (b) True

48) In the given figure, $PO \perp AB$ and PO = OQ. Is PQ the perpendicular bisector of line segment AB?

 (a) False   (b) True

49) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.
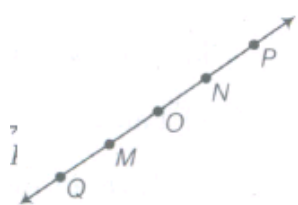
Q, M, O, N, P are points on the line $\overleftrightarrow{MN}$

 (a) False   (b) True

50) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.
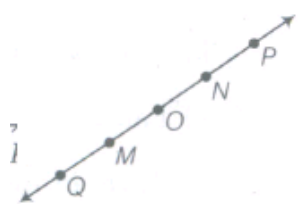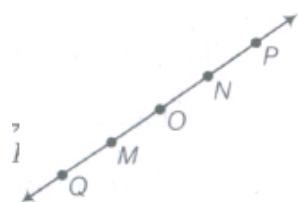M, O, N are points on a line segment $\overline{MN}$

 (a) False   (b) True

51) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.
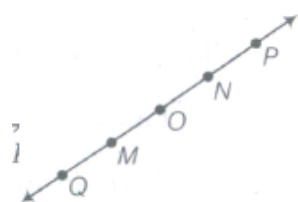M and N are end points of line segment $\overline{MN}$.

 (a) False   (b) True

52) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.
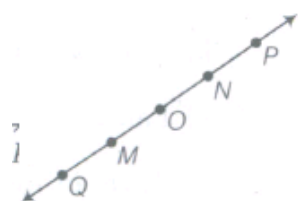
O and N are end points of line segment $\overline{OP}$

(a) True   (b) False

53) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.
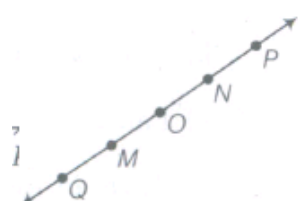
M is one of the end points of line segment $\overline{OQ}$.

(a) True   (b) False

54) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.
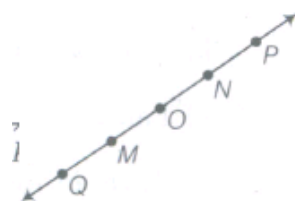
M is point on ray $\overrightarrow{OP}$.

(a) True   (b) False

55) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.

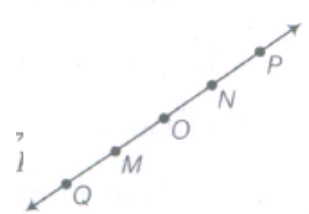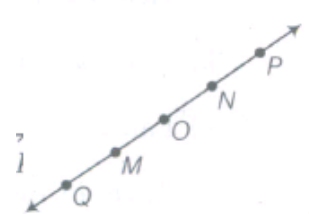Ray $\overrightarrow{OP}$ is different from ray $\overrightarrow{QP}$

(a) False   (b) True

56) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.

Ray $\overrightarrow{OP}$ is different from ray $\overrightarrow{QP}$

(a) True   (b) False

57) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.

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

(a) True   (b) False

58) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.

O is not an initial point of $\overrightarrow{OP}$

(a) True   (b) False

59) Consider the following figure of line $\overleftrightarrow{MN}$. Say whether following statements are true or false in context of the given figure.

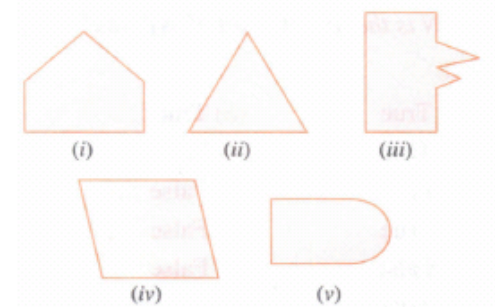N is the initial point of $\overrightarrow{NP}$ and $\overrightarrow{NM}$.
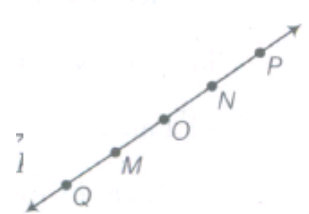
(a) False   (b) True

4 x 1 = 4

60) The line segment joining points A and B is denoted by   (1) $\bar{AB}$

61) The distance around the circle is the   (2) two semi-circle

62) The diameter of a circle divides it into   (3) segment

63) A region in the inteior of the circle enclosed by an arc and a chord   (4) circumference
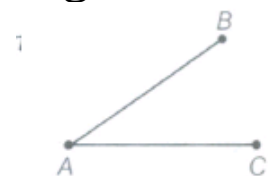
1 x 1 = 1

64) Look at the following figures:

What can you say? Are they closed?

57 x 2 = 114

65) Name the line segments in the given figure. Is it A, the end point at each line segment?
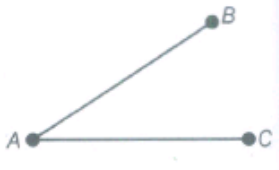
66) With a sharp tip of the pencil, mark four points on a paper and name them by the letters A, C, P, H. Try to name these points in different ways. One such way could be this

67) A star in the sky also gives us an idea of a point. Identify atleast five such situations in your daily life.

68) Name the line segments in the figure. Is A, the end point of each line segment?

69) How many lines can be drawn through two given points?

70) Find the number of common points, when two lines intersect each other.

71) A line contain how many points
 (a) minimum?
 (b) maximum?

72) Write the maximum number of points of intersection of three lines in a plane.

73) Write the minimum number of point of intersection of three lines in a plane.
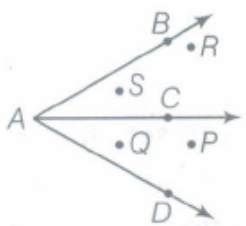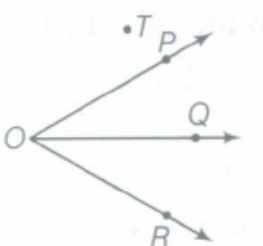
74) Write the name of angles in the given figure.
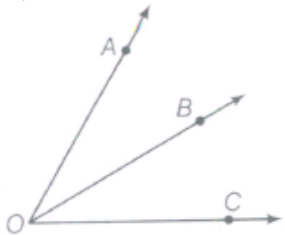
75) Write the points, on the given figure.
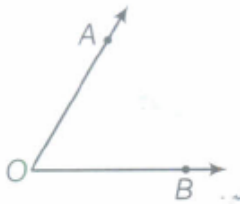
76) Write the points, which lie interior in the $\angle CAD$.

77) Write the points which lie exterior of the $\angle POQ$.

78) How many vertices are there in a triangle?

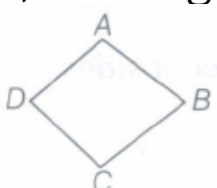79) How many line segments are required to draw a triangle?

80) A triangle made up of three non-collinear points P,Q and R .Then,write the name of the triangle.

81) How many sides, a quadrilateral have?

82) Write the number of vertices in a quadrilateral.

83) How many diagonals, a quadrilateral have?

84) In the given figure, write all vertices of the quadrilateral.

85) (a) Is every diameter of a circle also a chord?
(b) Is every chord of a circle also a diameter?
86) What is the name of chord, which passes through the centre of the circle?
87) What is relation between the radius and diameter of the circle?
88) How many chords can be drawn on the circle?
89) Is circle is a polygon?
90) Use the following figure to name:
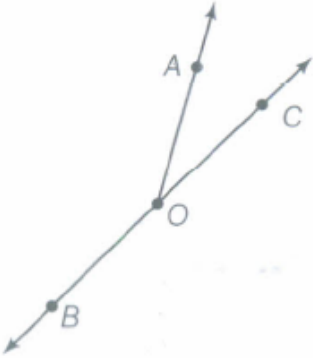
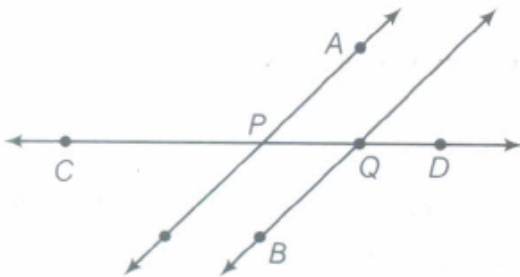(a) all the points.
(b) two line segments.
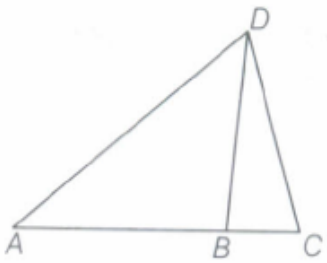91) Name all the line segments in given figure.
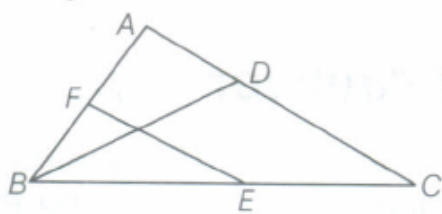

92) Name the line segments shown in given figure.
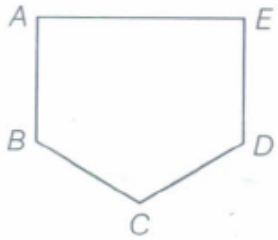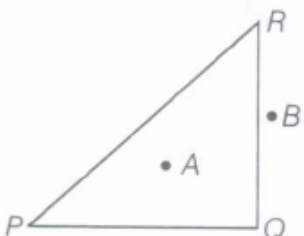

93) Consider the following figure and write the name of:

(a) a ray, which contains point A.
(b) a ray, which contains point B.
94) Draw two curves that are opened.
95) Draw two curves that are closed.
96) Name the vertices in given figure.

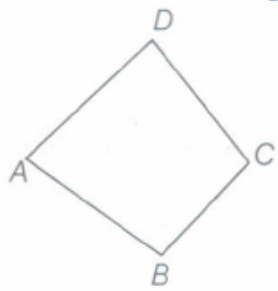97) Write down three angles involved in $\triangle ABC$ of the given figure.

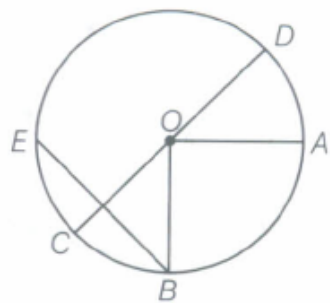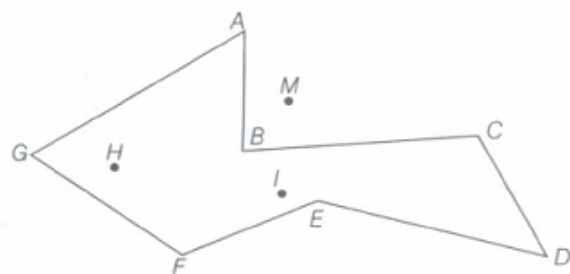98) In $\triangle PQR$ write its interior and exterior point.

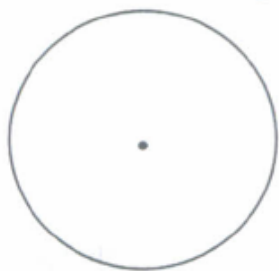99) Write the opposite sides of the given quadrilateral

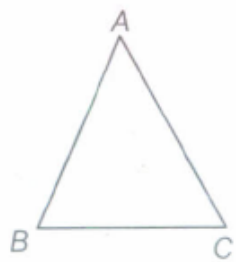100) Give the name of all chords in the given figure.

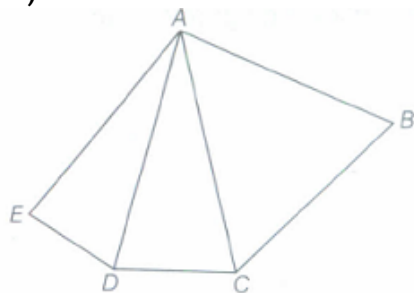101) Write all exterior and interior points of the given figure.

102) Write all vertex of the given figure.

103) Write vertex of opposite side of AB and BC of the given figure.


104) Write all vertices of the given figure.

105) From one given point, how many lines can be drawn? Draw few lines.
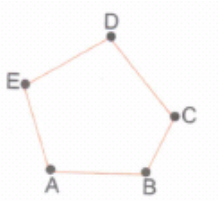106) From a given line, a portion has been cut.Write the name of it.
107) How many points are enough to fix a line?
108) Try to find more examples for line segments from your surroundings.
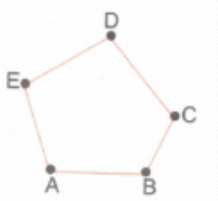109) Can you identify some closed and open curves from the figures (i), (ii), (iii), (iv)?

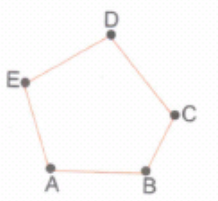(i)   (ii)

(iii)   (iv)
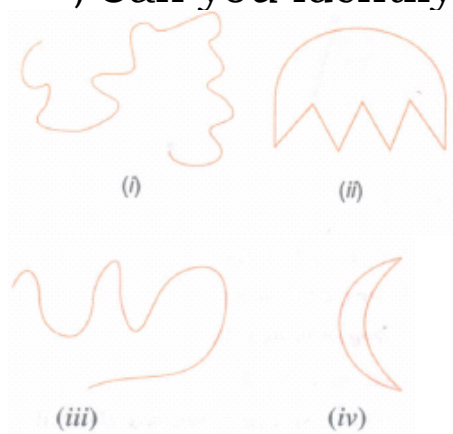
110)

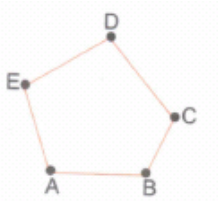Give justification to call it a polygon.

111)

Points B and C are its other vertices. Can you name the sides that meet at these points?

112)
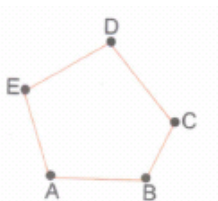
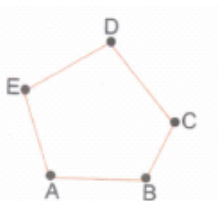Can you name the other vertices of the above polygon ABCDE?

113)

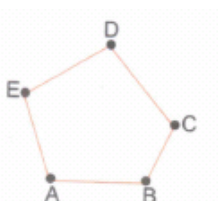Are the sides $\bar{AB}$ and $\bar{BC}$ adjacent? How about $\bar{AE}$ and $\bar{DC}$?

114)

Vertices E and D are adjacent, whereas vertices A and D are not adjacent vertices. Do you see why?

115)

Is $\bar{BC}$ a diagonal, why or why not?

116)

If you try to join adjacent vertices, will the result be a diagonal?

117) Draw rough diagrams to illustrate the following:
(a)Open curve
(b)Closed curve

118) In any quadrilateral ABCD, $\bar{AB}$ and $\bar{BC}$ are adjacent sides. Can you write other pairs of adjacent sides?

119) $\bar{AB}$ and $\bar{DC}$ are opposite sides. Name the other pair of opposite sides.

120) ∠A and ∠B are adjacent angles. List the other pairs of adjacent angles.

121) PM also a chord?
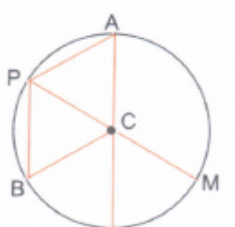
59 x 3 = 177

122) Take a sheet of paper. Make two folds (and crease them) to represent a pair of intersecting lines and discuss.
(a) Can two lines intersect in more than one point?
(b) Can more than two lines intersect in one point?

123) (a) Name the rays given in this picture.
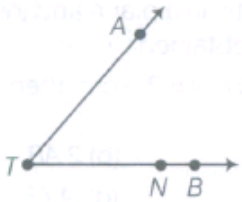
(b) Is 'T' a starting point of each of these rays?

124) Use the figure to name
 (a) five points.
 (b) a line.
 (c) four rays.
 (d) five line segments.
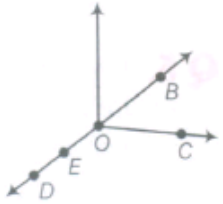
125) Name the line given in all possible (twelve) ways, choosing only two letters at a time from the four given letters.

126) 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.

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

128) How many lines can you draw passing through three collinear points? Draw a figure also.

129) Draw a figure to show that the points A, B, C and D are non-collinear.

130) Take any two points, in a plane and join. Also, write the name of the new figure obtained.

131) Draw a polygon with four line segments and write its
 (i) vertices
 (ii) sides
 (iii) diagonals

132) Draw rough diagram to illustrate the following:Open curve.

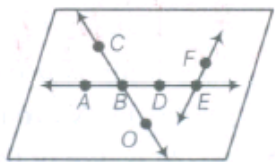133) Draw rough diagram to illustrate the following:Closed curve.

134) Draw any polygon and shade its interior.

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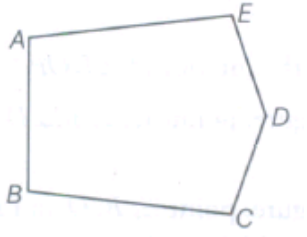 (a) Is it a curve?
 (b) Is it closed?

136) What is closed curve? Draw a closed curve.
137) What is open curve? Draw an open curve.

138) In the given figure, write the
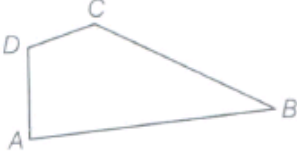 (i) number of sides.
 (ii) number of vertices.

139) Draw a rough diagram, if possible of the following:
 (a) An open curve made up entirely of line segment.
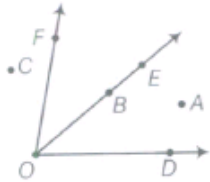 (b) A polypon with two sides.

140) Draw a diagram of a polygon with minimum number of sides.
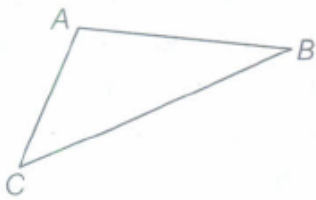
141) Name the angles in the given figure.

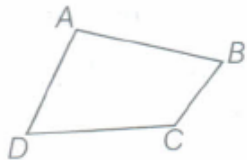142) In the given diagram, name the point(s).
 (a) In the interior of $\angle DOE$.
 (b) In the exterior of $\angle EOF$.
 (c) On $\angle EOF$.

143) In the following figure, name the angles.

144) Write the alternate name of the angle $\angle DCB$, in the given figure.

145) How many angles does a polygon of five sides has?

146) Does the vertex of an angle lies in its interior?

147) From the given figure, write its
 (a) interior
 (b) exterior
 (c) on the curve

148) 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?

149) In the following figure, write opposite vertex to side QR.
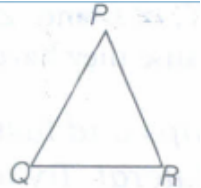
150) In the given figure, write the name of triangles.

151) Is this possible to draw a triangle with two sides and two vertices?

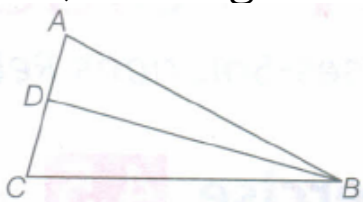152) Draw a rough sketch of quadrilateral PQRS, write
(a) two pair of opposite sides
(b) two pair of adjacent sides.

153) 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?

154) Investigate 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?

155) Draw a quadrilateral, in which both diagonals intersect each other at point Q.

156) Draw a quadrilateral in which two sides are parallel, but not equal and also plot a point P inside it.

157) Is it possible to draw a quadrilateral in which three vertices and four angles are available.

158) In the following figure, write angles of the quadrilateral ABCD.
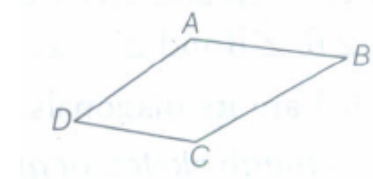
159) Draw a circle with two chords AB and PQ intersect each other at M.

160) Draw a circle in which PQO is a sector, also shaded the remaining region of the sector.
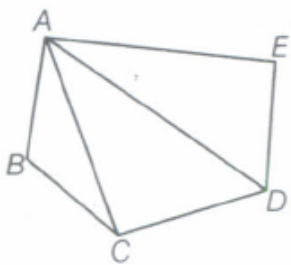
161) Can we calculate radius of a circle with the help of diameter?

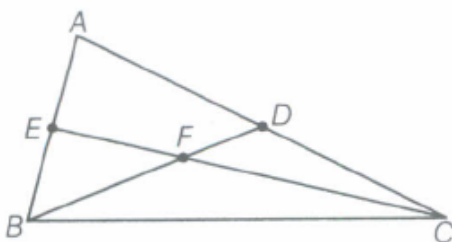162) How many diameters can be draw in a circle?

163) What is the maximum number of points of intersection of three lines in a plane?

164) What is the minimum number of points of intersection of three lines in a plane?
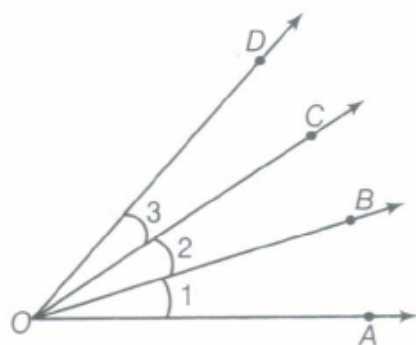
165) Name the vertices and the line segments in the given figure.

166) Write down six angles involved in the given figure.

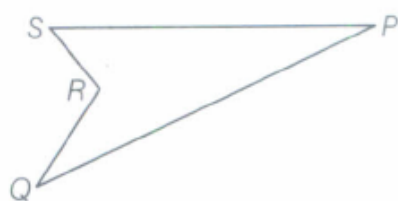167) In the following figure, name the angles using three letters.

(a) $\angle 1$
(b) $\angle 2$
(c) $\angle 3$

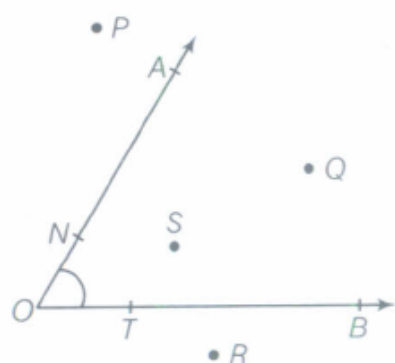168) What is common in the following figures (i) and (ii)?

Is figure (i) is a triangle? If not,why?

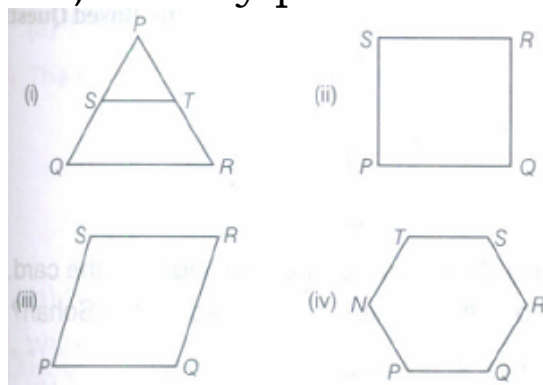169) Is PQRS a figure of polygon? If yes, what is the special name for it?

170) In the given figure, list the points which
(i) are in the interior of $\angle AOB$.
(ii) are in exterior of $\angle AOB$.
(iii) lie on $\angle AOB$.

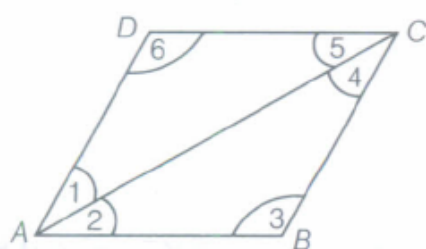171) Identify parallel line segments in each of the figure given below.

172) How many lines can pass through
(a) one given point?
(b) two given points?
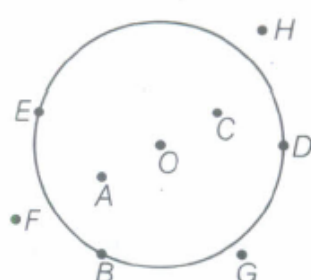(c) three non-collinear points?

173) How many radii can be drawn on a circle?

174) In the given figure, write

(a) name of the vertex of $\angle 3$.
(b) name of the common arm of $\angle 1$ and $\angle 2$.
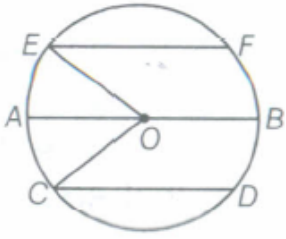(c) name the vertex of $\angle 4$.

175) In the given figure, name the points, which are

(a) in its exterior.
(b) in its interior.
(c) on the circle.

176) In the given figure, write the name of

(i) chords of the circle.
(ii) radii of the circle.
(iii) sector of the circle.

177) Where else do you see parallel lines? Try to find ten examples.

178) If $\overrightarrow{PQ}$ is a ray,
(a)What is its starting point?
(b)Where does the point Q lie on the ray?
(c)Can we say that Q is the starting point of this ray?

179) Name all the sides, adjacent sides, adjacent vertices of the following figure ABCDE.
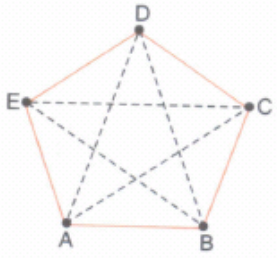
180) Draw a polygon ABCDEFGH and name all the sides, adjacent sides and vertices as well as the diagonals of the polygon.

41 x 5 = 205

181) Draw a rough figure and label suitably in each of the following cases.
(a) Point P lies on $\overline{AB}$.
(b)$\overleftrightarrow{XY}$ and $\overleftrightarrow{PO}$ intersect at M.
(c) Line I contains E and F but not D.
(d)$\overleftrightarrow{OP}$ and $\overleftrightarrow{OQ}$ meet at O.

182) Try to form a polygon with
(i) five matchsticks.
(ii) four matchsticks.
(iii) three matchsticks.
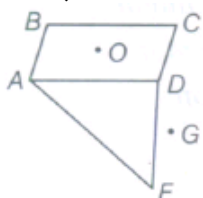(iv) two matchsticks.
In which case was it not possible? Why?

183) Classify the following curves as (i) open or (ii) closed.
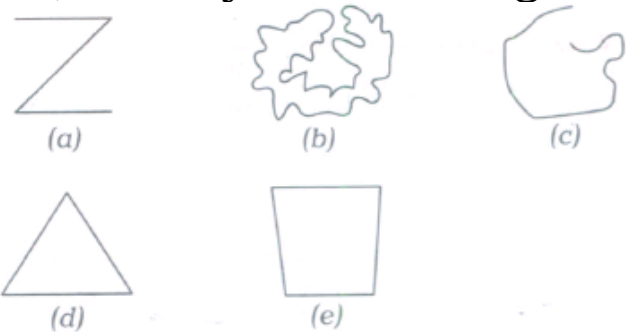
184) Illustrate, if possible, each one of the following with a rough diagram:
(a) A closed curve that is not a polygon.
(b) An open curve made up entirely of line segments.
(c) A polygon with two sides.

185) From the following figure, answer the following:

(a) Is ABCDE a polygon?
(b) Is O the exterior of the polygon?
(c) Is G is the interior of the polygon?

186) In the given figure, write the number of sides.
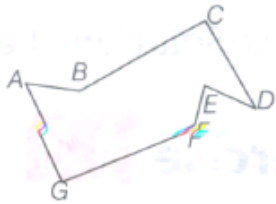
187) Draw a five sided polygon and shade its interior.

188) Draw a polygon having exactly eight sides.

189) 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.

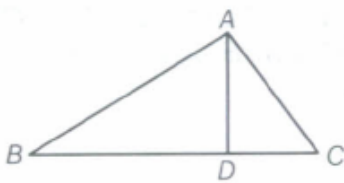**190)** Draw a diagram of two angles having only one common points.

191) Draw a diagram of two angles having two common points.

192) In the following figure, how many angles are there? Name them.
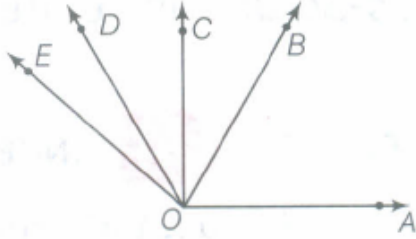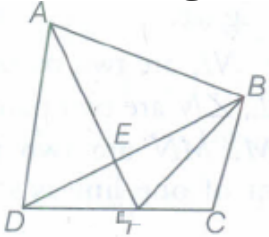

193) (a) Identify three triangles in the figure.

(b) Write the names of seven angles.
(c) Write the names of six line segments.
(d) Which two triangles have $\angle B$ as common?

194) Draw a triangle and make two points inside it.

195) Draw two triangles in which one side of both triangles are common.

**196)** In the given figure, write the name of triangles.

197) 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.

198) 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) point in the exterior
(g) a sector
(h) a segment
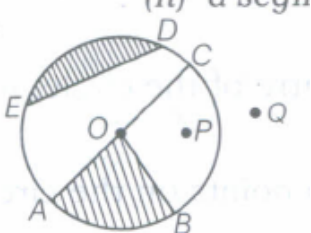
199) Draw any circle and mark
 (a) its centre
 (b) a radius
 (c) a diameter
 (d) a sector
 (e) a segment
 (f) a point in its interior
 (g) a point in its exterior
 (h) an arc

200) From the following figure, write the name
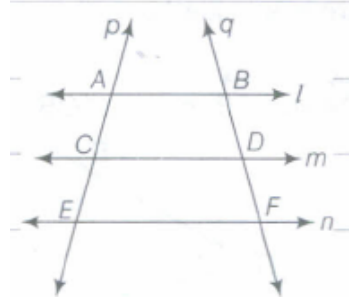
 (i) four pairs of intersecting lines.
 (ii) three collinear points.
 (iii) four non-collinear points.

201) From the above figure, draw the lines with points A, 8, C and D and write the answer of the following:
 (i) How many such lines can be drawn?
 (ii) Write the name of these lines.

202) Draw any four points A, B, C and D on your note book such that no three of them are collinear. Draw all lines that join them in pairs.
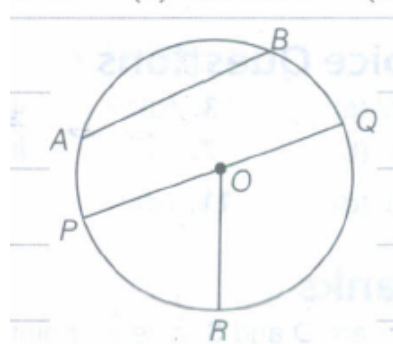
203) Look at the following figure and name the following:
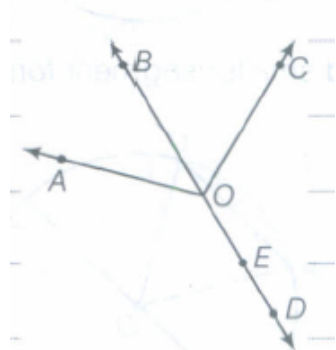
 (i) a line
 (ii) five line segments
 (iii) four rays
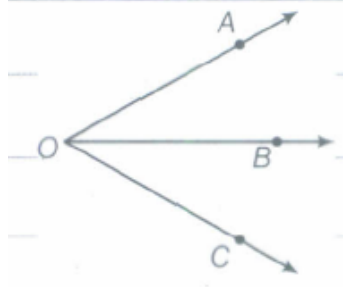 (iv) five points

204) In the following figure, find
 (i) chords
 (ii) diameter
 (iii) sector
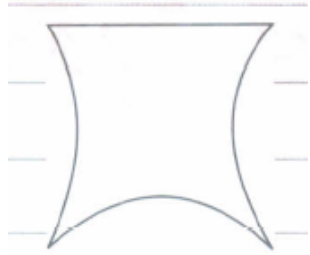

205) Draw a rough sketch of a quadrilateral ABCD Write
 (i) two pairs of opposite sides.
 (ii) two pairs of adjacent angles.

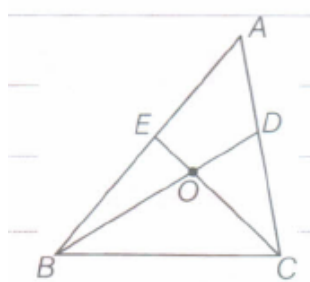**206)** In the following figure, write all angles.

207) Is this possible to draw a rough sketch of two triangles having two sides are common?

208) In the following figure, write the name of the figure, closed curve or polygon. Also give reason.

209) Draw rough diagram of two angles such that they have four common point.
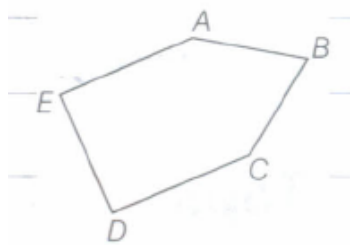
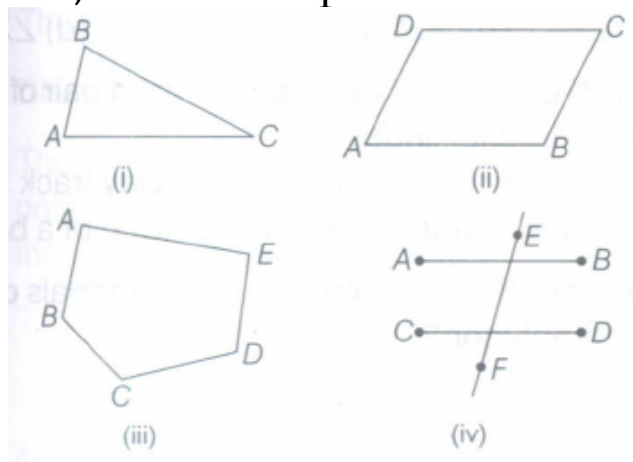**210)** In the following figure, write all triangles name.

211) Draw three circles with same centre and different radii. Will they intersect each other?

212) Can we draw two circle with same centre?
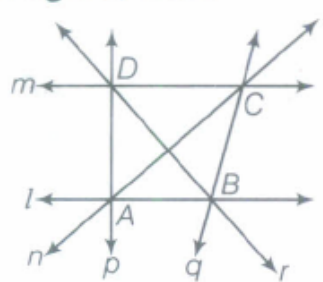
213) In the following figure, write all possible line segments.

214) Name the points and then the line segments in each of the following figures.

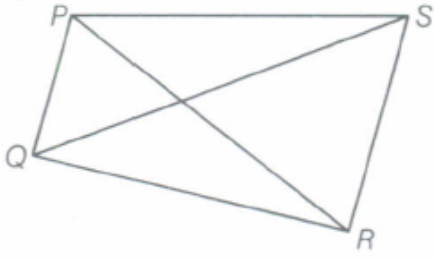**215)** In the given figure, write

(i) parallel lines.
(ii) point of intersection of the line I and n.
(iii) point of intersection of the line q and r.
(iv) point of intersection of the line m and r.
(v) point of intersection of the line p and m.

216) Look at following figure and answer the following questions.

(i) Name the four sides of quadrilateral PQRS.
(ii) Name the four pairs of adjacent sides.
(iii) Name two pairs of opposite sides.
(iv) Name a pair of diagonal.

217) In the given figure, O is the centre of the circle.
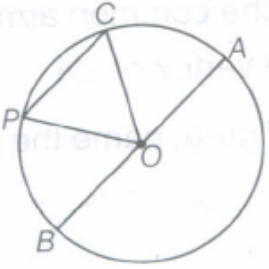
(a) Name all chords of the circle.
(b) Name all radii of the circle.
(c) Name a chord, which is not the diameter of the circle.
(d) Shade the sectors OAC and OPB.
(e) Shade the smaller segment of the circle formed by CP.

218) Sohan wants to show gratitude toward his teacher by giving a card made by him. He has three pieces of paper pasted one above the other as shown in the figure. These pieces are arranged in a way that AB||HC||GD||FE||.He wants to decorate the card by putting up a coloured take on non-parallel sides of the card.
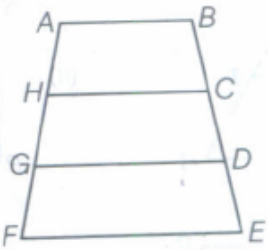
(a) Write the non-parallel sides of the card.
(b) Which value is depicted by the Sohan?

219) Look at figure and mark a point
(a) A which is in the interior of both ∠1and ∠2.
(b) B, which is in the interior of only ∠1.
(c) C in the interior of ∠1.
Now, state whether points Band C lie in the interior of ∠2 also.

220) Here is a ray $\overrightarrow{OA}$ It starts at 0 and passes through the point A. It also passes through the point B. Can you also name it as $\overrightarrow{OB}$?Why? $\overrightarrow{OA}$ and $\overrightarrow{OB}$ are same here.

Can we write $\overrightarrow{OA}$ as $\overrightarrow{AO}$? Why or why not? Draw five rays and write appropriate names for them. What do the arrows on each of these rays show?
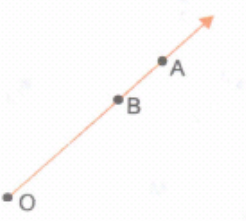
221) Draw ten differently shaped polygons.

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