



MATHS

BOOKS - HT Olympiad Previous Year Paper

BASIC GEOMETRICAL IDEAS

Mathematical Reasoning

1. A pair of lines which do not intersect at any point are called_____ lines.

A. Perpendicular

B. Parallel

C. Concurrent

D. Intersecting

Answer: B



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2. All _____ of a circle are equal in measure.

A. Sectors

B. Radii

C. Segments

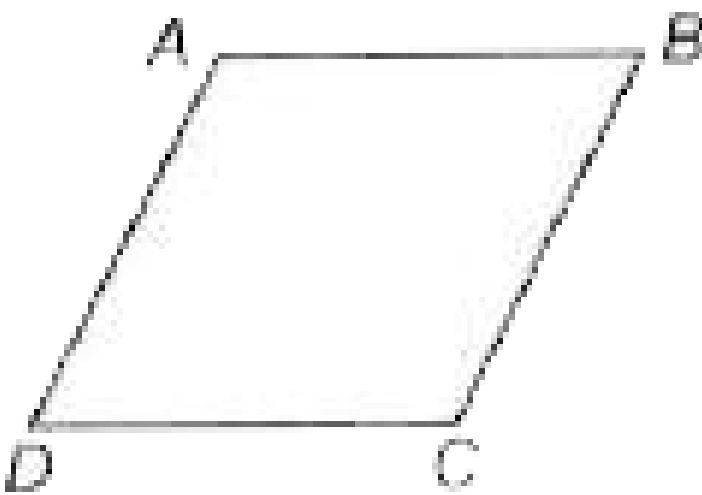
D. Chords

Answer: B



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3. How many pairs of adjacent vertices are there in the given figure?



A. 6

B. 8

C. 4

D. 5

Answer: C



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4. Any part of a circle is called an.....of the circle.

A. Ray

B. Line segment

C. Arc

D. None of these

Answer: C



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5. The basic elements of a quadrilateral are

A. 4 vertices

B. 4 sides

C. 4 angles

D. All of these

Answer: D



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6. Which of the following statements is incorrect?

A. Line AB is same as line BA.

B. Line segment AB is same as line segment BA.

C. Ray AB is same as ray BA.

D. AB is perpendicular to CD is same as CD is perpendicular to AB.

Answer: C



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7. A circle can have only one _____ and an infinite number of _____

A. diameter, radii

B. centre, length of circumference

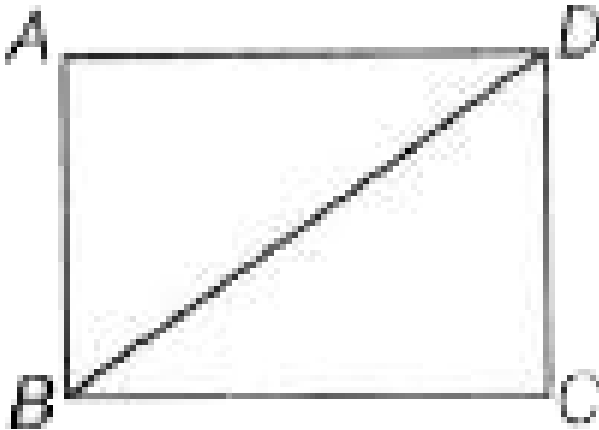
C. chord, centre

D. centre, radii

Answer: D



8. In the given figure, there are _____ angles.



- A. 4
- B. 8
- C. 6
- D. 10

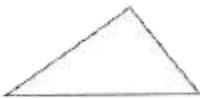
Answer: B



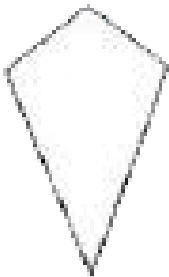
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9. Which of the following is not a polygon?

A.

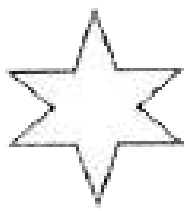


B.



C.





D.

Answer: C



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10. If the sum of two angles is greater than 180° , then which of the following is not possible for the two angles ?

A. One obtuse angle and one acute angle

B. One reflex angle and one acute angle

C. Two obtuse angles

D. Two right angles

Answer: D



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11. Three or more line are ___ if they pass through a common point.

A. Parallel

B. Collinear

C. Concurrent

D. All of these

Answer: C



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12. A _____ has two end points and a definite length

A. Line

B. Line segment

C. Point

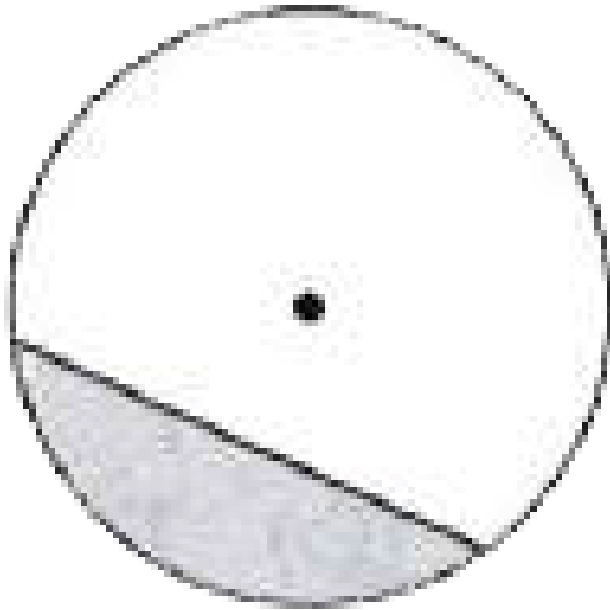
D. None of these

Answer: B



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13. Name the shaded region of the given figure.



A. Sector

B. Segment

C. Chord

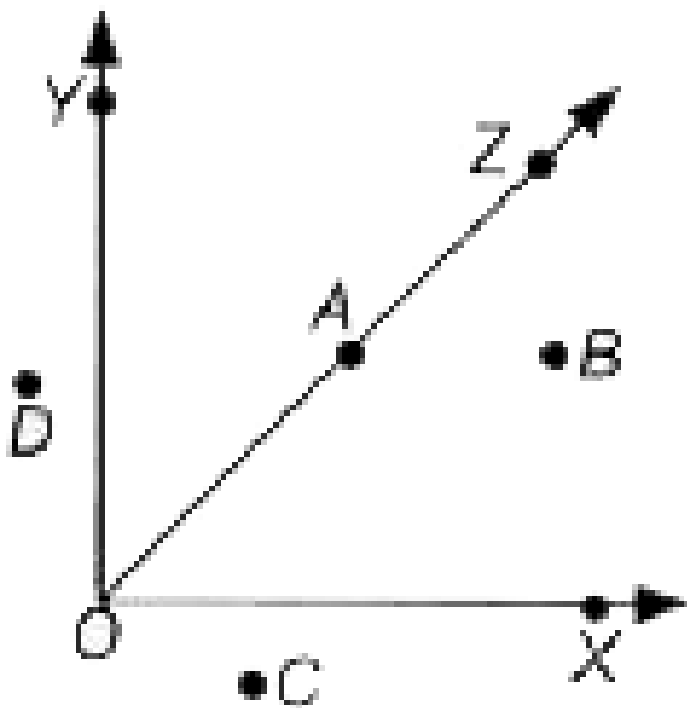
D. Radius

Answer: B



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14. How many points lies in the exterior of $\angle YOZ$?



A. 4

B. 5

C. 6

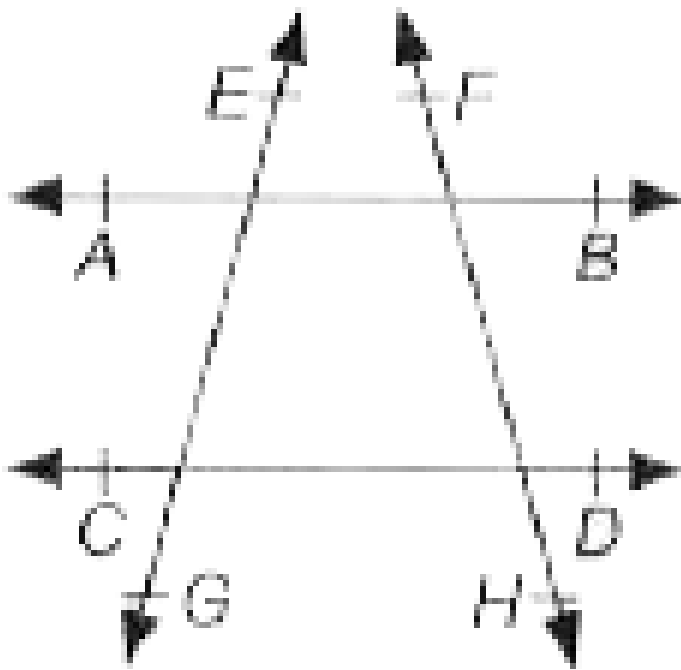
D. 8

Answer: A



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15. Which of the following pair of line segments are non-intersecting?



A. AB, EG

B. AB, FH

C. FH, CD

D. AB, CD

Answer: D



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16. A set of points which extends infinitely in both the directions is called _____

A. Line

B. Line segment

C. Point

D. None of these

Answer: A



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17. The number of arcs made by a chord on a circle is ___

A. 3

B. 2

C. 1

D. 4

Answer: B



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18. How many maximum number of lines can be drawn through one point?

A. One

B. Two

C. Zero

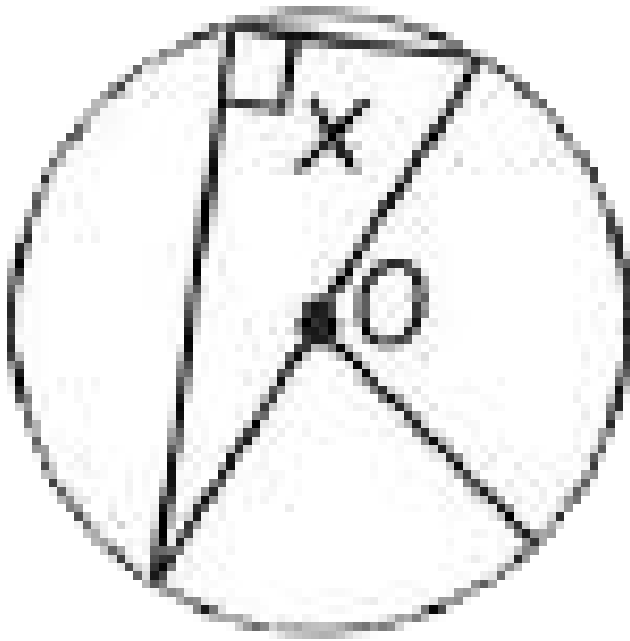
D. Infinite

Answer: D



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19. What type of angle is angle X?



A. Acute

B. Obtuse

C. Right

D. Straight

Answer: C



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20. Select the correct option

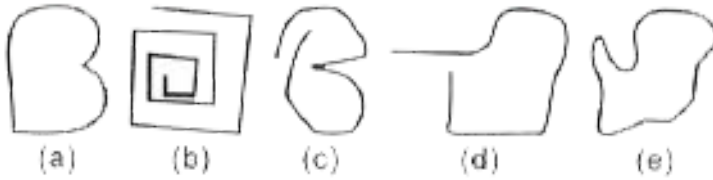
- A. The diameter of a circle divides it into three semi-circles
- B. A simple curve is one that cross itself.
- C. Both (A) and (B)
- D. Neither (A) nor (B)

Answer: D



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21. How many figures are closed figures?



A. 3

B. 4

C. 5

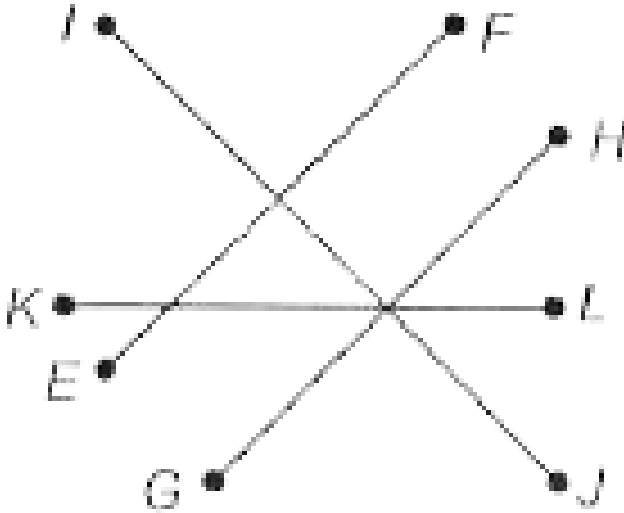
D. 2

Answer: D



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22. Raghav drew the line segments shown here on a piece of paper. Which of the following pairs of line segments appears to be perpendicular?



A. \overline{GH} and \overline{KL}

B. \overline{GH} and \overline{IJ}

C. \overline{EF} and \overline{KL}

D. \overline{EF} and \overline{GH}

Answer: B



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23. Number of line segments in the given figure

is _____



A. 5

B. 10

C. 15

D. 20

Answer: B



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24. The polygon which is made up of least number of sides is a _____

A. Square

B. Triangle

C. Rectangle

D. None of these

Answer: B



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25. How many lines can be drawn to pass through two points simultaneously?

A. One

B. Two

C. More than three

D. No line

Answer: A



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Achievers Section Hots

1. Fill in the blanks.

Any drawing (straight or non - straight) done without lifting the pencil may be called a P.A Q

is the one that does not cross itself. A curve is said to be R if its ends are joined A S is a simple closed curve made up of line segments

A. P curve Q open curve R closed S line

B. P line Q curve R open S line

C.

P curve Q simple curve R closed S polygon

D. P curve Q closed curve R open S circle

Answer: C



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2. Read the following statements carefully and select the correct option.

Statement-1: A sector is the region in the interior of a circle enclosed by an arc on one side and a pair of radii on the other two sides.

Statement-2: A segment of a circle is the region in the interior of the circle enclosed by an arc and a chord.

A. Both Statement-1 and Statement-2 are true.

B. Statement-1 is true but Statement-2 is false.

C. Statement-1 is false but Statement-2 is true.

D. Both Statement-1 and Statement-2 are false

Answer: A



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3. State 'T' for true and 'F' for false.

(a) Two distinct lines meeting at a point are called concurrent lines.

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

(c) A line has no end points.

A. (a) (b) (c)
F T F

B. (a) (b) (c)
F T T

C. (a) (b) (c)
T F F

D. (a) (b) (c)
T T T

Answer: B



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4. Which of the following statements is false?

A. Two diameters of a circle will necessarily intersect.

B. The diameter of a circle is always in its interior.

C. Every diameter of a circle is also a chord.

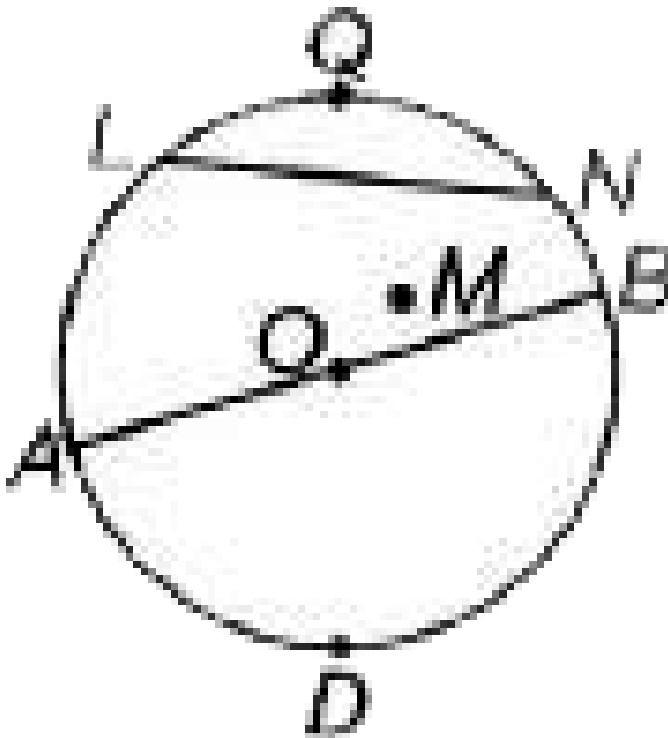
D. Every chord of a circle is also a diameter.

Answer: D



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5. In the given circle, which of the following statements is incorrect?



A. AB is the diameter.

B. LQN is an arc.

C. M is the centre of the circle.

D. ADBA is the semicircle.

Answer: C



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