



MATHS

**BOOKS - HT Olympiad Previous Year
Paper**

**INTRODUCTION TO EUCLID'S
GEOMETRY**

Mathematical Reasoning

1. If a point C lies between A and B, then $AC + BC =$ ____

A. $2AB$

B. AB

C. $2BC$

D. $\frac{1}{2}AB$

Answer: B



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2. Euclid's Postulate 1 is

A. A straight line may be drawn from any one point to any other point.

B. A terminated line can be produced indefinitely.

C. All right angles are equal to one another

D. None of these

Answer: A



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3. A solid has _____

- A. 0 dimension
- B. 1 dimension
- C. 2 dimensions
- D. 3 dimensions

Answer: D



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4. If C be the mid-point of a line segment AB,
then $AC = BC = (\underline{\quad}) AB$

A. 3

B. $\frac{1}{2}$

C. 2

D. $\frac{1}{4}$

Answer: B



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5. Two distinct intersecting lunes cannot be parallel to the same line.

A. Same

B. Different

C. Both (A) and (B)

D. None of these

Answer: A



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6. Which of the following options has one fixed end point and can be extended in the other direction indefinitely ?

A. A ray

B. A line

C. A line segment

D. All of these

Answer: A



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7. Which of the following is a false statement ?

A. An infinite number of lines can pass through a given point.

B. A unique line can be drawn to pass through two given points.

C. Ray $\overline{AB} = \text{ray } \overline{BA}$

D. A ray has one end point

Answer: C



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8. Things which are equal to the same thing are _____ to one another

A. Perpendicular

B. Not equal

C. Equal

D. Parallel

Answer: C



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9. According to Euclid's axioms, the _____ is greater than the part.

A. half

B. large

C. whole

D. None of these

Answer: C



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10. Which of the following is not a Euclid's axiom?

A. The whole is greater than the part

B. Things which are double of the same things are equal to one another.

C. Things which are halves of the same things are equal to one another.

D. If two things are equal, then their sum is equal to $\frac{1}{3}$ of the one thing.

Answer: D



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11. If a straight line falling on two straight lines makes the interior angles on the same side of it taken together less than two right angles, then the two straight lines, if produced indefinitely, meet on that side on which the sum of angles is _____ two right angles.

A. Equal to

B. More than

C. Less than

D. Can't be determined

Answer: C



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12. Find the number of dimension(s) a line has.

A. 0

B. 1

C. 2

D. 3

Answer: B



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13. Euclid stated that all right angles are equal to each other in the form of

A. An axiom

B. A definition

C. A postulate

D. A proof

Answer: C



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14. Two points in a plane determine

A. Unique

B. Two

C. Three

D. None of these

Answer: A



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15. Rectilinear figure is formed by _____

A. Planes

B. Points

C. Straight lines

D. None of these

Answer: C



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16. In the given figure $PR = QS$, then which of the following axioms shows that $PQ = RS$?



- A. The whole is greater than the part.
- B. If equals are subtracted from equals, the remainders are equal.

C. Things which are equal to the same things are equal to one another.

D. None of these

Answer: B



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17. Which of the following needs a proof ?

A. An axiom

B. A definition

C. A postulate

D. A theorem

Answer: D



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Achievers Section (HOTS)

1. Fill in the blanks.

(i) Two lines in a plane not having any point common are called ___(P) lines.

(ii) The edges of a surface are ___(Q)

(iii) Two distinct planes can intersect at ___(R)
points.

(iv) ___(S) planes can pass through two distinct
points.

A. $\left\{ \begin{array}{llll} P & Q & R & S \\ \text{Paralle} & \text{lines} & \text{infinite} & \text{infinite} \end{array} \right.$

B. $\left\{ \begin{array}{llll} P & Q & R & S \\ \text{Parallel} & \text{Planes} & \text{one} & \text{one} \end{array} \right.$

C. $\left\{ \begin{array}{llll} P & Q & R & S \\ \text{Perpendicular} & \text{lines} & \text{one} & \text{zero} \end{array} \right.$

D.

$\left\{ \begin{array}{llll} P & Q & R & S \\ \text{Perpendicular} & \text{planes} & \text{infinite} & \text{infinite} \end{array} \right.$

Answer: A



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

(i) 'There are infinite points on a line' is an Euclidean postulate.

(ii) Only one plane passes through three non-collinear points.

(iii) Boundaries of solids are surfaces.

A. i ii iii
 F F F

B. i ii iii
 T T F

C. i ii iii
 T F T

D. i ii iii
 F T T

Answer: D



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3. Which of the following statements is
CORRECT ?

A. For every line l and for every point P not
lying on l , there exist a unique line m
passing through P and parallel to l .

- B. For two distinct point A and B, there exists a third point C lying on the line AB which is in between A and B.
- C. A figure formed by the line segments is called a rectilinear figure.
- D. All of these

Answer: D



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