MATHS

BOOKS - HT Olympiad Previous Year Paper

PRACTICAL GEOMETRY

Mathematical Reasoning

1. Through a point in a plane, number of lines that can be drawn is_____

A. 1

B. 2

C. 0

D. Infinite

Answer: D

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2. An angle of 105° is drawn using a pair of compass and ruler by bisecting angles_____.

A. 90° and 180°

B. 30° and 60°

C. 90° and 120°

D. 120° and 180°

Answer: C

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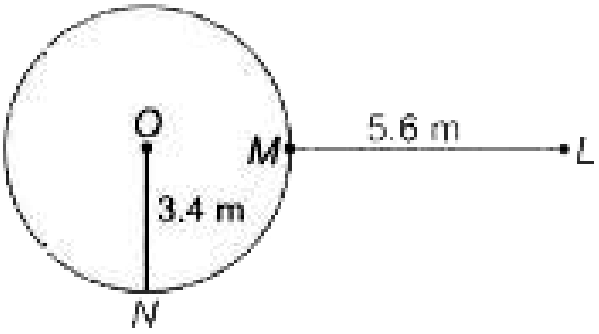
3. If M is a point on the circle and L is a point in the exterior of the circle. What will be the

length of $\overline{OL}$. If O is the centre of the circle?



A. 5m

B. 10m

C. 9m

D. 13m

Answer: C

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4. If a perpendicular is drawn to a line segment PQ and Q using protractor and point R is marked on perpendicular then_____.

A. $\overline{PR} \perp \overline{QR}$

B. $\overline{PQ} \mid\mid \overline{QR}$

C. $\overline{PQ} \mid\mid \overline{PR}$

D. $\overline{PQ} \perp \overline{QR}$

Answer: D

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5. Raghav constructed an angle of 150° and trisected it.Measure of two angles taken together will be _____.

A. 120°

B. 100°

C. 60°

D. 50°

Answer: B

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6. A line segment has_____end points.

A. No

B. 2

C. 1

D. 3

Answer: B

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7. Number of perpendicular bisectors on a line segment is _____.

A. Three

B. Five

C. One

D. Infinite

Answer: C

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8. The bisector of an angle always divides it into____angles.

A. right

B. acute

C. equal

D. obtuse

Answer: C

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9. If a line segment XY=16.4 cm is bisected at Z, then length of ZY=_

A. 8.2 cm

B. 8cm

C. 8.1cm

D. 16cm

Answer: A

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10. Number of set squares in the geometry box is

A. 0

B. 1

C. 2

D. 3

Answer: C

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Achievers Section Hots

1. Which of the following steps is incorrect while constructing an angle of 120°?

Step I: Draw any line PQ and take a point O on it.

StepII: Place the pointer of the compass at O and draw an arc of convenient radius which cuts the line at A.

Step -III: Without disturbing the radius on the compass draw an arc with A as centre which cus the first arc at B.

Step IV: Again without disturbing the radius on the compass and with B as centre, draw an arc which cuts the first arc at A.

Step V: Join OC. Then $\angle COA$ is the required angle whose measure is 120°

A. Only step-IV

B. Both Step -II and Step -III

C. Only Step -III

D. Both Step -III and Step-IV

Answer: A

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2. Fill in the blanks.

(i) Perpendicular bisector of the diameter of a circle passes through the $\underline{P}$ of the circle.

(ii) If B is image of A in line l and D is image of C in line l, then AC $= \underline{Q}$

(iii) Angle bisector is a ray which divides the angle in $\underline{R}$ equal parts.

A. P Q R
centre BD 2

B. P Q R
centre AD 1

C. $\begin{matrix} P & Q & R \\ \text{centre} & AB & 1 \end{matrix}$

D. $\begin{matrix} P & Q & R \\ \text{centre} & BC & 2 \end{matrix}$

Answer: A

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3. Arrange the given steps in correct order of constructing a perpendicular usingruler and compasses.

Steps of construction:

1. With Aand B as centres and a radius greater

than AP construct two arcs, which cut each other at Q.

2. Join PQ. Then $\overrightarrow{PQ}$ is perpendicular to l.

We write $\overrightarrow{PQ} \perp l$.

3.With P as centre and a convenient radius, construct an arc intersecting the line l at two points A andB.

4. Given a point P on a line l.

A. 3-4-2-1

B. 4-3-1-2

C. 4-1-3-2

D. 1-2-3-4

Answer: B

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4. State T for true and F for false.

(i) It is possible to divide a line segment in 5 equal parts by perpendicularly bisecting a given line segment 5 times.

(ii) With a given centre and a given radius, only one centre be drawn.

(iii) If we bisect an angle of a square, then we get two angles of 45° each

A. $\begin{matrix} i & ii & iii \\ F & T & T \end{matrix}$

B. $\begin{matrix} i & ii & iii \\ F & T & F \end{matrix}$

C. $\begin{matrix} i & ii & iii \\ T & F & T \end{matrix}$

D. $\begin{matrix} i & ii & iii \\ T & T & F \end{matrix}$

Answer: A

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5. Read the statement carefully and select the correct option.

Statement 1: Bisector of a line segment means dividing the line segment into equal halves.

Statement 2: Set squares can be used to draw a perpendicular and parallel lines.

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

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

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

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

Answer: A

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