STANDARD 7TH: CHAPTER 1

Geometrical Constructions

Q1. Select all correct options

1. Draw a right-angled triangle. Draw the perpendicular bisectors of its sides. Where does the point of concurrence lie?
    a. At the centroid
    b. At the incenter
    c. At the circumcenter
    d. At the orthocenter

2. Draw an obtuse-angled triangle and a right-angled triangle. Find the points of concurrence of the angle bisectors of each triangle. Where do the points of concurrence lie?
    a. The obtuse-angled triangle: at the centroid; the right-angled triangle: at the circumcenter.
    b. The obtuse-angled triangle: at the incenter; the right-angled triangle: at the centroid.
    c. The obtuse-angled triangle: at the incenter; the right-angled triangle: at the incenter.
    d. The obtuse-angled triangle: at the circumcenter; the right-angled triangle: at the orthocenter.

3. A, B, and C live in three different places in the city. A cricket playground is equidistant from the three places. Which geometrical construction should be used to represent this?
    a. Constructing an equilateral triangle.
    b. Drawing three congruent circles with centers at the houses.
    c. Drawing perpendicular bisectors from each house to find the point of concurrency.
    d. None of the above

4. In a triangle, which geometric construction finds the point of concurrency for the angle bisectors?
    a. Perpendicular bisectors
    b. Incenter
    c. Centroid
    d. Circumcenter

5. What property holds true for the segments formed by the intersection of angle bisectors with the opposite side of a triangle?
    a. They are congruent.
    b. They are parallel.
    c. They have equal lengths.
    d. They have equal angles.

6. Which of the following constructions can be used to find the angle bisector of an angle?
    a. Perpendicular bisector
    b. Midpoint construction
    c. Compass and straightedge
    d. Parallel lines construction

7. Which geometric construction is used to construct the incenter of a triangle?
    a. Perpendicular bisector
    b. Angle bisector
    c. Median
    d. Altitude

8. In triangle PQR, if the length of PQ is 10 cm, PR is 12 cm, and the angle bisector of angle P meets QR at S cm, what is the length of QR for QS is 5.
    a. 10 cm
    b. 12 cm
    c. 5 cm
    d. 6cm

9. In triangle ABC, if the length of AB is 12 cm, BC is 16 cm, and the angle bisector of angle B meets AC at F and AF = 12 cm, what is the length of FC?
    a. 12 cm
    b. 16 cm
    c. 8 cm
    d. 6 cm

10. Two angles with equal measures are congruent to each other.
    a. True
    b. False