Q1.   The question consists of two statements namely, Assertion (a) and Reason (R). Please select the correct answer.

Assertion (A)	Reason (R)
The area of an isosceles triangle having base = 24 cm and each of the equal sides equal to 13cm is 60cm^2.	If 2s = (a + b+ c) where a, b, c are the sides of a triangle, then area = $\sqrt{s(s-a)(s-b)(s-c)}$.

a.   Both Assertion (A) and Reason (B) are true and Reason (R) is a correct explanation of Assertion (A).

b.   Both Assertion (A) and Reason (B) are true but Reason (R) is not a correct explanation of Assertion (A).

c.   Assertion (A) is true and Reason (R) is false.

d.   Assertion (a) is false and Reason (R) is true.

Q2.   Which of these is correct-

a.   In any triangle, the side opposite to the larger (greater) angle is longer.

b.   In any right triangle, the side opposite to 90˚ is largest.

c.   Both

d.   None

Q3.   Write any Euclid's postulate.

OR

Does Euclid's fifth postulate imply the existence of parallel lines?

Q4.   The sides of a triangular plot are in the ratio of 3 : 5 : 7 and its perimeter is 300 m. Find its area.

Q5.   In figure (a), ∠ X = 62°, ∠ XYZ = 54°. If YO and ZO are the bisectors of ∠ XYZ and ∠ XZY respectively of triangle XYZ, find ∠ OZY and ∠ YOZ.
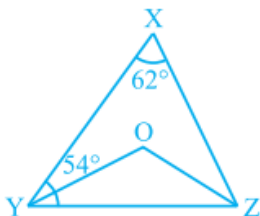

figure (a)

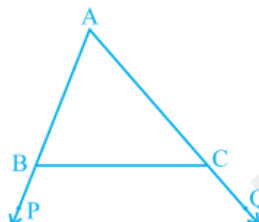*figure (b)*

Q6. In figure (b), sides AB and AC of triangle ABC are extended to points P and Q respectively. Also, ∠ PBC < ∠ QCB. Show that AC > AB.

Q7. In which quadrant or on which axis do each of the points (– 3, 9), (3, – 3), (0,5), (– 3, 0), (12500, 29300) and (– 7,– 20) lie?

Q8. Ray OS stands on a line POQ. Ray OR and ray OT are angle bisectors of ∠ POS and ∠ SOQ, respectively. If ∠ POS = x, find ∠ ROT.

Q9. A rhombus shaped field has green grass for 18 cows to graze. If each side of the rhombus is 30 m and its longer diagonal is 48 m, how much area of grass field will each cow be getting?

OR

Students of a school staged a rally for cleanliness campaign. They walked through the lanes in two groups. One group walked through the lanes AB, BC and CA; while the other through AC, CD and DA. Then they cleaned the area enclosed within their lanes. If AB = 9 m, BC = 40 m, CD = 15 m, DA = 28 m and ∠ B = 90˚, which group cleaned more area and by how much? Find the total area cleaned by the students (neglecting the width of the lanes).

Q10. If ∠ XYZ = 64° and XY is produced to point P. Draw a rough figure from the given information. If ray YQ bisects ∠ ZYP, find ∠ XYQ and reflex ∠ QYP.

Q11. ABC and DBC are two isosceles triangles on the same base BC and vertices A and D are on the same side of BC. If AD is extended to intersect BC at P, show that AP bisects ∠ A as well as ∠ D. Also find whether AP is the perpendicular bisector of BC or not.

OR

In right triangle ABC, M is the mid-point of hypotenuse AB. C is joined to M and produced to a point D such that DM = CM. Point D is joined to point B. Show that BCD is a right triangle. Also prove that DM = ½ AB.