पुष्पना International School
Shree Swaminarayan Gurukul, Zundal

Examination P A - 3					
Student Name				**Grade** 9^{th}	
Date				**Subject**	**MATHEMATICS**
		Time		**Total Marks**	**50**

(i) Choose correct options **[1X8 = 8]**

1. AD is a diameter of a circle and AB is a chord. If AD = 34 cm AB = 30 cm, the distance of AB from the centre of the circle is

a. 17cm b. 15 cm c. 4 cm d. 8 cm

2. If AB = 12 cm, BC = 16 cm and is perpendicular to BC, then the radius of the circle passing through the points A,B and C is

a. 6 cm b. 8 cm c. 10 cm d. 12 cm

3. With the help rural and a compass it is not possible to construct an angle of

a. 37.5^0 b. 40^0 c. 22.5^0 d. 67.5^0

4. Which of the following angles can be constructed by the using ruler and the pair of compass only?

a. . 22.5^0 b. 45^0 c. 70^0 d. 90^0

5. The perimeter of an equilateral triangle is 60m then area is

a. $10\sqrt{3}$ m^2 b. $15\sqrt{3}$ m^2 c. $20\sqrt{3}$ m^2 d. $100\sqrt{3}$ m^2

6. The base of an isosceles triangle is 24 cm and its area is 192 square centimetres. Its perimeter is

a. 48 cm b. 60 cm c. 54 cm d. 64 cm

7. The lengths of three sides of a triangle are 18cm, 24cm and 30cm, and then the height of corresponding to smallest side is

a. 12cm b. 16cm c. 24cm d. 32cm

8. For what value of (BC + AC), the construction of a Δ ABC is possible, if AB = 7cm and $\angle A = 45^0$?

a. 6.5 cm b. 7 cm c. 6.9 cm d. 7.3 cm

(ii) Choose correct options **[1X4 = 4]**

9. The centre of a circle lies in _____ of the circle.

10. A point, whose distance from the centre of a circle is greater than its radius lies in _____ of the circle.

11. The longest chord of a circle is a _____ of the circle.

12. An arc is a _____ when its ends are the ends of a diameter.

(ii) Solve: Each carry 1 mark **[1 X 8= 8]**

13. Write heron's formula

14. For an isosceles right angled triangle having each of the equal side a, find the semi perimeter.

15. Write the angle bisector of 175 degree

16. Draw 30 degree without protector.

17. In how many parts of a plane can divide a circle, if it is intersect perpendicular?

18. A chord of a circle of radius 7.5 cm with center O is length 9cm. Find its distance from the centre.

19. Find the area of a triangle with sides 5cm, 12cm and 13cm.

20. Draw 45 degree without protector

Solve: Each carry 2 marks (Any three) **[2 X 3 = 6]**

21. Recall that two circles are congruent if they have the same radii. Prove that equal chords of congruent circles subtend equal angles at their centres**.**

22. Construct the angles of 90^0 and write steps of construction.

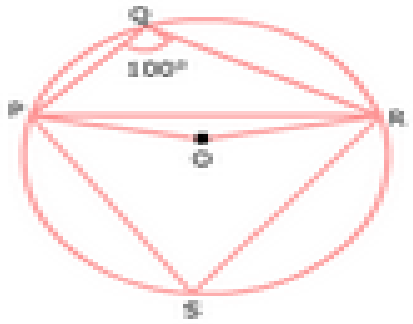
23. Find the area of a triangle, two sides of which are 8cm and 11cm and the perimeter is 32cm.

24. An isosceles triangle has perimeter 30 cm and each of the equal sides is 12 cm. Find the area of the triangle**.**

Solve: Each carry 3 marks (Any Four) **[3X 4 = 12]**

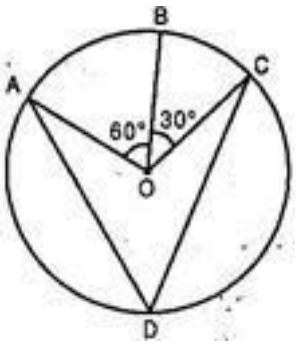
25. Construct an equilateral triangle, given its side 5 cm and justify the construction. Ans. Steps of construction.

26. In figure, $\angle PQR = 100^0$, where P, Q, R are points on a circle with centre O. Find $\angle OPR$.

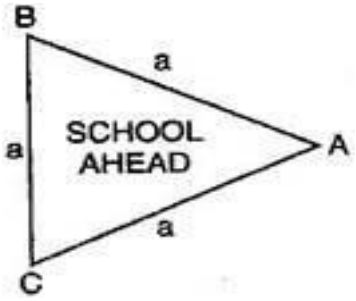


27. Construct a triangle ABC in which BC = 7 cm, $\angle B = 75^0$ and AB + AC = 13 cm.

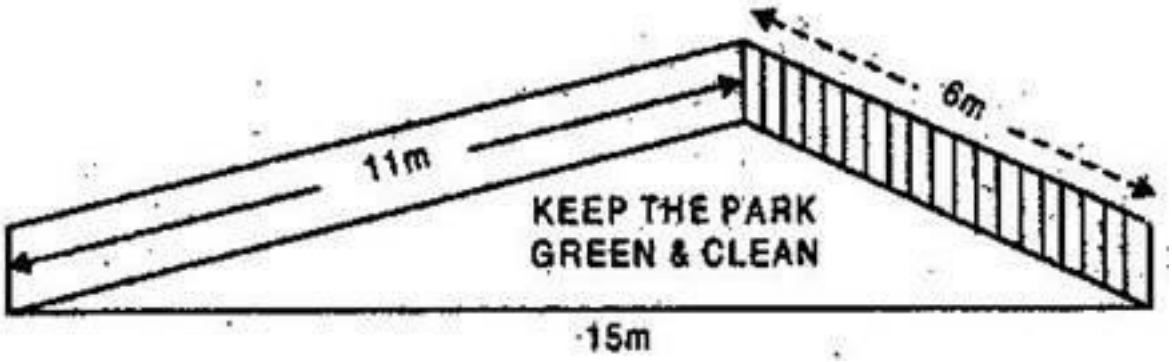
28. in figure, A, B, C are three points on a circle with centre O such that $\angle AOB = 60^o$. If D is a point on the circle other than the arc ABC, find $\angle ADC$



29. A traffic signal board, indicating 'SCHOOL AHEAD' is an equilateral triangle with side a. Find the area of the signal board, using Heron's formula. If its perimeter is180 cm, what will be the area of the signal board?



30. There is slide in a park. One of its side walls has been painted in some colour with a message "KEEP THE PARK GREEN AND CLEAN", (see figure). If the sides of the wall are 15m, 11 m and 6 m, find the area painted in colour.



Solve: Each carry 4 marks (Any Three) **[4 X 3 = 12]**

31. A park, in the shape of a quadrilateral ABCD has ∠C = 90, AB = 9 m, BC = 12 m, CD = 5 m and AD = 8 m. How much area does it occupy?

32. Construct a triangle ABC in which BC = 8 cm, ∠B = 45^0 and AB - AC = 3.5 cm.

33. Find the area of a quadrilateral ABCD in which AB = 3 cm, BC = 4 cm, CD = 4 cm, DA = 5 cm and AC = 5 cm.

34. Prove that a cyclic parallelogram is a rectangle.

35. In figure, $\angle ABC = 69^0$, $\angle ACB = 31^0$, find $\angle BDC$.