I. **Choose right answer for the following questions from the following options** :   8x1=8

1. The rationalizing factor of $2+\sqrt{3}$ is :
   a) $2 - \sqrt{3}$ b) $(2-\sqrt{3})^2$ c) $2+\sqrt{3}$ d) $(2+\sqrt{3})^2$

2. The standard form of Quadratic polynomial is :
   a) $ax+b$ b) $ax+c$ c) ax^2+bx+c d) ax^3+cx+b

3. The supplementary angle of 100^0 is :
   a) -10^0 b) 10^0 c) 80^0 d) -80^0

4. In which Quadrant does the point A $(-2,3)$ lie :
   a) I   b) II   c) III   d) IV

5. Probability of losing a game is $\frac{1}{4}$. Then the probability of winning it is :
   a) $\frac{3}{4}$ b) $\frac{2}{4}$ c) $\frac{1}{4}$ d) 1

6. Area of a square of side 8 cm is :
   a) 64 cm   b) 64 cm^2 c) 16 cm   d) 16 cm^2

7. The chord having smallest distance from the centre from the given figure is :
   a) AB   b) CD   c) EF   d) GH

8. Value of $2^{\frac{3}{2}}$ x $2^{\frac{2}{3}}$
   a) 8   b) 16   c) $4^{\frac{6}{4}}$ d) $4^{\frac{3}{2}}$
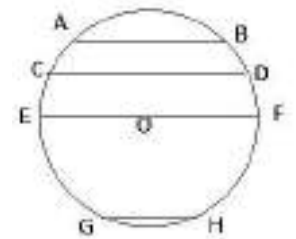
II. **Answer the following questions** :   8x1=8

9. Represent 1.0253 in $\frac{p}{q}$ form.

10. What is the sum of co-interior angles formed between parallel lines ?

11. Name the Quadrilateral whose one of the opposite sides are parallel.

12. In the given figure AB∥DC and the area of △AEB is 25cm^2.
    Find the area of ABCD.

13. Simplify using identity : $50^2 - 20^2$

14. Write the co-ordinates of origin.

15. In the given figure, ∠ACB=30^0. Find the ∠AOB.

16. Write formula to find the area of a sphere.
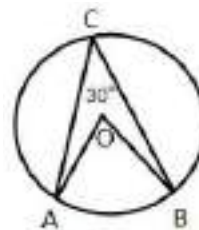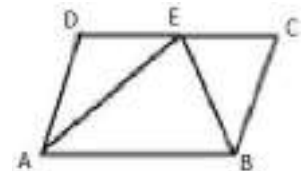
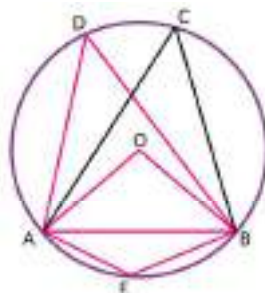III. **Answer the following questions :**   8x2=16

17. Represent $\sqrt{5}$ on number line.

18. In the given figure AB∥CD. Then find x and y.
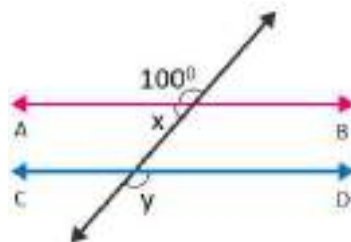
19. In the given figure, ∠ADB=30^0. Find the ∠AEB, ∠ACB and ∠AOB.

20. Find the square of (2a+3b+5).
21. The below table shows the range of wage earned given to the laborer in a factory. Draw the frequency polygon for the following data.

Range of wages	100-200	200-300	300-400	400-500	500-600
No. of workers	20	25	15	10	15

22. If two coins tossed simultaneously, find the probability of the following.
    (i) getting at 2 head
    (ii) getting at least one head
23. A conical pit of top diameter 3.5 m is 12 m deep. What is its capacity in kilolitres ?
24. Factorise : (i) $x^2 + 5x + 6$ (ii) $8x^3 - y^3$

IV. **Answer the following questions** :   9x3=27
25. Find the surface area and volume of a sphere of radius 7 cm.
26. Represent $\sqrt{3.5}$ on number line.
27. Draw a line graph for the equation 2x+y=12.
28. Find the Mean, Median and Mode of the following data.
    15, 15, 12, 13, 23, 22, 17, 18, 12, 13
29. Prove that the diagonals of a square are equal.
30. Divide p(x) = x^3+3x^2+3x+1 by g(x)=x+1
31. Factorise : $27y^3 + 125z^3$
32. In the given figure, the side AB and AC of △ABC are produced to the points E and D respectively. If the bisector BO and CO of ∠CBE and ∠BCD respectively meet at point O. Then prove that
    ∠BOC = $90^0 - \frac{1}{2}$ ∠BAC.
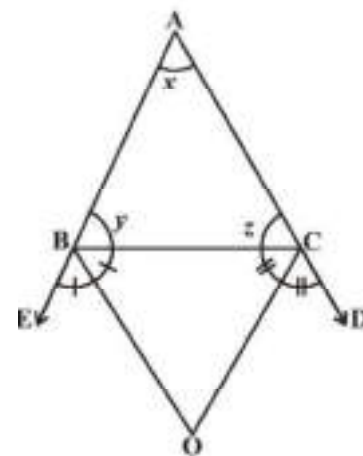
33. Prove that the line segment joining the mid points of two sides of a triangle is parallel to the third side.

V. **Solve** :   4x4=16
34. A park in the shape of a quadrilateral ABCD has ∠C=90^0, AB=9m, BC=12m, CD=5m and AD=8m. How much area does it occupy ?
35. Construct a triangle whose perimeter is 11cm and base angles are 60^0 and 90^0. Verify the length of the sides of the triangle.
36. In the given data find Mean and Mode.

x	5	10	15	20	25	30	35
y	5	2	3	2	3	4	1

37. AD is an altitude of an isosceles triangle ABC in which AB=AC. Show that
    (i) AD bisect BC
    (ii) AD bisect ∠A
38. Monica has a piece of canvas whose area is 551 m². She uses it to have a conical tent made with a base radius of 7m. Assuming that all the stitching margins and the wastage incurred while cutting amount to approximately 1m², find the volume of the tent that can be made with it.