

Mathematics - IX  
(Final Revision)

Section - A

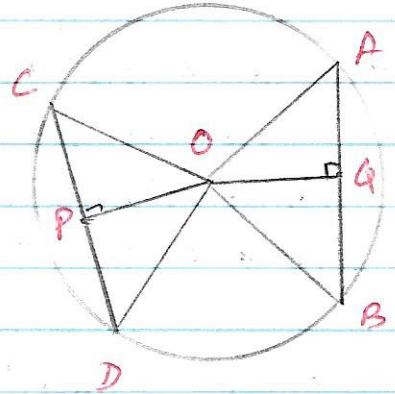
- 1) Simplify :  $\left(\frac{7^{-4}}{4^{-2}}\right)^{1/4}$
- 2) If  $a^{\frac{1}{3}} + b^{\frac{1}{3}} + c^{\frac{1}{3}} = 0$ , then which among the following expression is correct?  
(a)  $a^3 + b^3 + c^3 = 0$  (b)  $a + b + c = 3a^{\frac{1}{3}} \cdot b^{\frac{1}{3}} \cdot c^{\frac{1}{3}}$  (c)  $a + b + c = 0$   
(d)  $a^3 + b^3 + c^3 = 3abc$
3. P is a point on y-axis at a distance of 6 units from x-axis lying below x-axis. What will be the coordinates of P?
4. Solve the equation  $x + 4 = 10$  and state Euclid's axiom used.
5. In a cricket match, a batsman hits a sixer 8 times out of 32 balls played. Find the probability that a sixer is not hit in a ball.
6. If a circle is divided into eight equal parts, find the angle subtended by each arc at the centre.
7. Identify a rational number among the following numbers:  
 $\sqrt{2}$ ,  $0.2020020002\dots$ ,  $\pi$ ,  $0.534534534\dots$
8.  $\sqrt{2}$  is a polynomial of which degree?
9. What do you mean by ordinate of a point?
10. State any two Euclid's axiom.

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11. State two events such that one has probability '0' and the other has probability '1'. Give reasons and support your answers with an example.

12. In figure,  $AB$  and  $CD$  are two chords of a circle with centre  $O$ .

If  $\angle AOB = 110^\circ$  and  $\angle COD = 110^\circ$ ,  
find the length of  $OP$ , given that  
 $AB = 8$  cm and  $OP$  is perpendicular  
to  $CD$ .



13. Is  $\pi$  a rational number? Justify your answer.

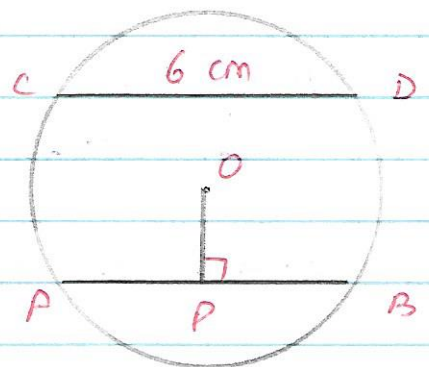
14. Define zero polynomial. Write its degree.

15. In which quadrants, the points  $P(2, -3)$  and  $Q(-3, 2)$  lie?

16. Define the terms: point and line.

17. Check whether  $\frac{7}{6}$  can be an empirical probability or not? Give reason.

18. In fig,  $AB$  and  $CD$  are two chords equidistant from the centre  $O$ .  $OP$  is the perpendicular distance from centre  $O$  to  $AB$ . If  $CD = 6$  cm, find  $PB$ .



19) If  $p(x) = x^2 - 4x + 3$ , evaluate  $p(-1) - p(\frac{1}{2})$ .

20) Find the point where the graph of linear equation  $7 - 2x + 4y = 0$  cuts the y-axis.

21) In a  $\triangle ABC$ ,  $\angle A = 45^\circ$  and  $\angle B = 60^\circ$ . Arrange the sides of the triangle in ascending order.

22) Express  $0.328$  in the form of  $\frac{p}{q}$ , where  $p$  and  $q$  are integers and  $q \neq 0$ .

23) In which quadrant or on which axis does each of the following lie?  $(-4, 2)$ ,  $(3, -2)$ ,  $(-4, -5)$ ,  $(0, -7)$

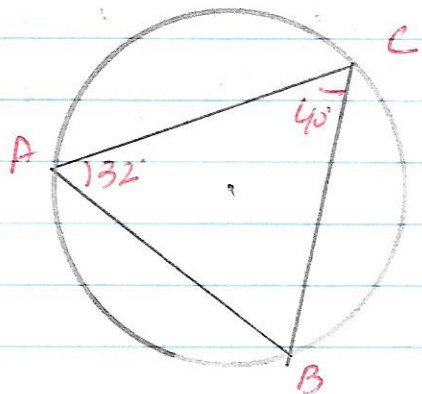
24) The area of a rhombus is  $96 \text{ cm}^2$ . If one of its diagonals is  $16 \text{ cm}$ , then find the length of its side.

25) Find the median of the given data:  
40, 70, 65, 70, 75, 95, 100 and 50

26. Chord  $AB$  subtends  $\angle AOB = 60^\circ$  at the centre of a circle. If  $OA = 5 \text{ cm}$ , find the length of  $AB$ .

27) Find the class-mark of the class interval  $130-150$

28) In the given figure, if  $O$  is the centre of the circle and  $\angle COB = 32^\circ$ , find  $\angle ABC$ .



best - A

29) What is the degree of the polynomial  $p(x) = 2x + \frac{3}{2}x^3 - 7$

30) Find the value of  $a$ , for which the polynomial  $2x^2 + ax + 12$  has 1 as its zero

31) If a point is on negative side of  $x$  axis at distance of 5 units from origin, then find the coordinate of the point.

32) Express  $x = 3y$  in the form  $ax + by + c = 0$  and indicate the values of  $a$ ,  $b$  and  $c$ .

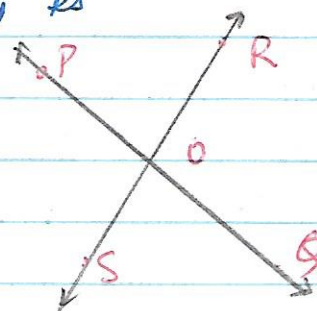
33) In  $\triangle ABC$ ,  $\angle A = 65^\circ$  and  $\angle B = 30^\circ$ , which side of the triangle is the longest? Give reason for your answer.

34) Find the curved surface area of a right circular cone whose slant height is 10 cm and base radius is 7 cm.

35) The total surface area of a cube is  $726 \text{ cm}^2$ . Find the length of its edge.

36) Factorise :  $y^2 - 8y + 16$

37) In the figure two lines  $PS$  and  $QR$  intersect at  $O$ . Name pair of vertically opposite angles.



38) A die is thrown six times and number on it is noted:

Number of Die	1	2	3	4	5	6
Frequency	1	1	1	1	1	1

What is the probability that it is a prime number?

39) Identify an irrational number among the following:  
 $\sqrt{0.09}$ ,  $\frac{5}{3}$ ,  $\sqrt{5}$ ,  $6.\bar{3}$ .

40) In  $\triangle ABC$ , if  $AB = AC$  and  $\angle B = 70^\circ$ , find  $\angle A = ?$

41) Write a rational number between  $\sqrt{5}$  and  $\sqrt{7}$ .

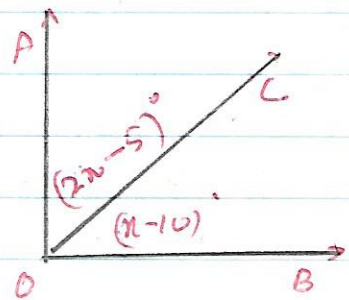
42) What is the degree of the polynomial  $4x^4 + 5x + 7$ ?

43) If one angle of a triangle is equal to the sum of the other two angles, then what type of triangle is it?

44) An exterior angle of a triangle is  $105^\circ$  and its interior opposite angles are equal. Find each of these equal angles.

45) If  $125^x = \frac{25}{5^x}$ . Find  $x$

46) In fig, given  $AO \perp OB$ , find  $\angle BOC$



47) Find an irrational number between 2.3 and 2.5

48) If  $p(x) = x^2 - 2\sqrt{2}x + 1$ , then find  $p(2\sqrt{2})$ .

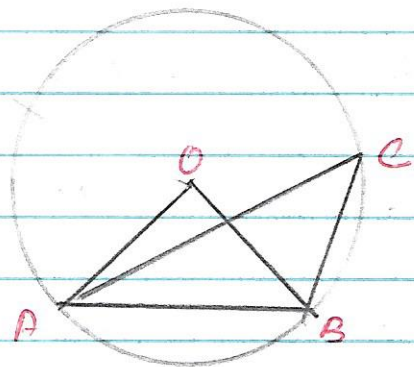
49) Find the number obtained on rationalising the denominator

$$\frac{1}{\sqrt{7}-2}$$

50) Write linear equation representing a line which is parallel to y-axis and is at a distance of 2 units on the left side of y-axis.

51) Write the linear equation representing a line which is parallel to x-axis and passing through the point (3, -4)

52) In figure OAB is an equilateral triangle. If O is the centre of the circle, find the measure of  $\angle ACB$ .



53) Simplify  $\left(\frac{1}{27}\right)^{\frac{-2}{3}}$

54. A square and a rhombus are on the same base and between some parallels. What is the ratio of their areas.

55. In the figure, if O is the centre of the circle and  $\angle CBA = 35^\circ$ . Find the value of  $x$ .

