



Sanchit
IX-8

TIME - 3 HOURS

MAXIMUM MARKS - 80

General Instructions

- i) All questions are compulsory.
- ii) The question paper consists of 30 questions divided into 4 sections, A, B, C and D. Section-A comprises of 6 questions of 1 mark each, Section-B comprises of 6 questions of 2 marks each, Section-C comprises of 10 questions of 3 marks each and Section-D comprises of 8 questions of 4 marks each.
- iii) Use of calculator is not permitted.
- iv) Attach the graph along with the answer.

SECTION A

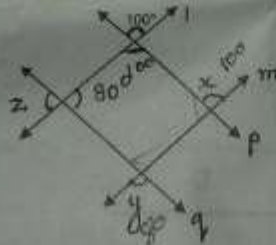
1. Find the value of $\overline{0.23} + \overline{0.2\bar{2}}$.
2. In ΔPQR , $\angle P = 70^\circ$, $\angle R = 30^\circ$. Which side of this triangle is the longest? Give reasons for your answers.
3. Find the remainder when polynomial $x^3 + 3x^2 + 3x + 1$ is divided by $x + 1$.
4. A card is drawn from a pack of 52 cards. What is the probability of getting a non ace card.
5. Find the perpendicular distance of the point $P(-3, -6)$ from the x-axis.
6. The difference of the two complementary angles is 40° . Find the angles.

SECTION B

7. Three coins are tossed simultaneously 200 times with the following frequencies of different outcomes:

OUTCOME	3 Heads	2 Heads	1 Head	No Head
FREQUENCY	23	72	77	28

8. Find the probability of getting
 a) 2 Heads
 b) at least 2 Heads
9. Solve the equation, $x - 10 = 25$ and state the axiom used.
10. Factorize $27y^3 + 125z^3$.
11. Find the values of x and y in the given figure, if $l \parallel m$ and $p \parallel q$.



11. AD and BC are equal perpendiculars to a line segment AB. Show that CD bisects AB.



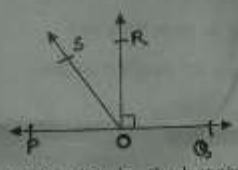
12. An isosceles triangle has perimeter 30cm and each of the equal sides is 12cm. Find the area of the triangle.

SECTION C

13. Represent $\sqrt{3.5}$ on the number line.

14. Factorize $27p^3 - \frac{1}{216} - \frac{9}{2}p^2 + \frac{1}{8}p$.

15. POQ is a line. Ray OR is perpendicular to line PQ, OS is another ray lying between rays OP and OR. Prove that $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$.



16. Show that in a right angled triangle, the hypotenuse is the longest side.

17. A triangle and a parallelogram have the same base and the same area. If the sides of the triangle are 26cm, 28cm and 30cm, and the parallelogram stands on the base 28cm, find the height of the parallelogram.

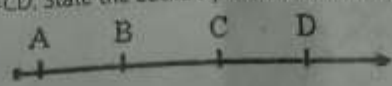
18. Find the coordinates of the point
 i) which lies on both x and y-axis
 ii) whose ordinate is -2 and lies on y-axis.
 iii) whose abscissa is 4 and lies on x-axis

19. Cards with numbers 1,2,3,...,100 are placed in a box and mixed thoroughly. One card is drawn. What is the probability that the card drawn is
 i) A prime number less than 30?
 ii) A multiple of 5 or 7?
 iii) A multiple of 5 and 7?

20. If $m = 3 - 2\sqrt{2}$. Find the value of $m^2 + \frac{1}{m^2}$.

21. Check whether polynomial $p(x) = 2x^2 - 9x^2 + x + 12$ is a multiple of $2x - 3$ or not.

22. If $AC=BD$, show that $AB=CD$. State the Euclid's postulate/axiom used for the same.



SECTION D

23 Simplify $\left(\frac{81}{16}\right)^{-\frac{3}{4}} \times \left[\left(\frac{25}{4}\right)^{-\frac{3}{2}} + \left(\frac{5}{2}\right)^{-2}\right]$.

OR

Find the value of $\frac{4}{(216)^{\frac{2}{3}}} + \frac{1}{(256)^{\frac{3}{4}}} + \frac{1}{(243)^{\frac{2}{3}}}$

24 Factorize $(2x - 3y)^2 + (3y - 4z)^2 + (4z - 2x)^2$.

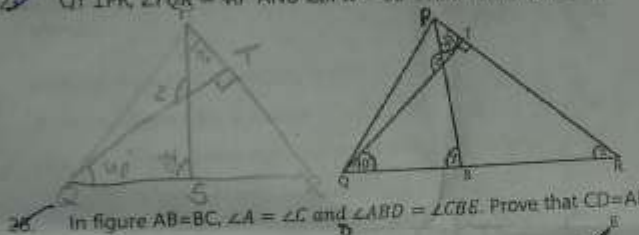
OR

Factorize $x^3 + 13x^2 + 32x + 20$.

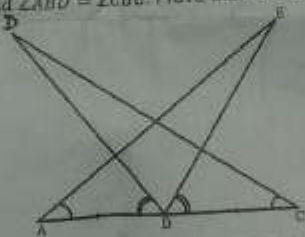
25 Plot the points A(0,3), B(5,3), C(4,0) AND D(-1,0) on the graph paper. Identify the figure ABCD and find whether the point E(2,2) lies inside the figure or not?

26 A field is in the shape of a trapezium, its parallel sides are 25m and 10m and non parallel sides are 14m and 13m, find the area of the field.

27 QT ⊥ PR, ∠TQR = 40° AND ∠SPR = 30°. Find the values of x, y and z.



28 In figure: AB=BC, ∠A = ∠C and ∠ABD = ∠CBE. Prove that CD=AE.



29 In an isosceles triangle ABC, with AB=AC, the bisectors of ∠B and ∠C intersect each other at O. Join A to O. Show that:
 i) OB=OC ii) AO bisects ∠A

30 A recent survey found that the ages of workers in a factory are distributed as follows:

Age (in years)	20-29	30-39	40-49	50-59	60 and above
Number of workers	38	27	86	46	3

- If a person is selected at random, find the probability that the person is:
- i) Under 40 but over 30 years
 - ii) 40 years or more
 - iii) Under 40 years
 - iv) Under 60 but over 39 years

