

CBSE Sample papers-04 (unsolved)
SUMMATIVE ASSESSMENT -I
MATHEMATICS
Class - IX

Time allowed: 3 hours

Maximum Marks: 90

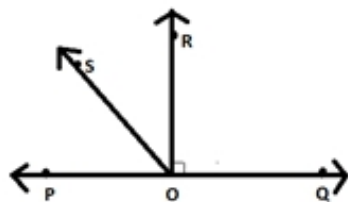
General Instructions:

- a) All questions are compulsory.
- b) The question paper comprises of 31 questions divided into four sections A, B, C and D. You are to attempt all the four sections.
- c) Questions 1 to 4 in section A are one mark questions. These are MCQs. Choose the correct option.
- d) Questions 5 to 10 in section B are two marks questions.
- e) Questions 11 to 20 in section C are three marks questions.
- f) Questions 21 to 31 in section D are four marks questions.
- g) There is no overall choice in the question paper. Use of calculators is not permitted.

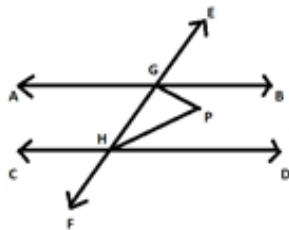
Section A

- Q1. The value of $2.45 + 0.36$ is
- a) 27
 - b) 100
 - c) 4
 - d) 11
- Q2. If $p(x) = x + 3$, then $p(x) + p(-x)$ is equal to
- a) 2
 - b) 4
 - c) 1
 - d) 0
- Q3. The number of propositions deduced by Euclid are
- a) Infinite
 - b) 876
 - c) 43
 - d) 465

- Q4. The point where the two coordinate axes meet is called
- Quadrant
 - Abscissa
 - Origin
 - Ordinate
- Q5. Identify $\sqrt{1.44}$ as rational or irrational numbers. Give its decimal representation also.
- Q6. Find the zero of the polynomials $p(x) = 3x - 2$ and $p(x) = 2x + 5$.
- Q7. In an isosceles triangle, prove that the altitude from the vertex bisects the base.
- Q8. How many quadrants are of a coordinate plane? Write the quadrants in which
- $x > 0$
 - $y > 0$
 - x and y both are less than zero.
- Q9. In the given figure, $\square POR$ and $\square QOR$ form a linear pair. If $a - b = 80^\circ$, find the values of a and b .
- Q10. Is the following statement true? Justify your answer.
- “A line contains exactly two points.”
- Q11. Prove that $\sqrt{7} + 3$ is not a rational number.
- Q12. Visualize the representation of 2.3 on the number line upto 4 decimal places.
- Q13. Find the value of a if the polynomial $2x^3 + ax^2 + 11x + a + 3$ is exactly divisible by $2x - 1$.
- Q14. Use the factor theorem to determine whether $g(x)$ is a factor of $p(x)$ if
- $$p(x) = x^3 + 3x^2 + 3x + 1 \text{ and } g(x) = x + 2.$$
- Q15. Is the statement true? Justify your answer.
- “Two parallel lines cannot have a common end point.”
- Q16. In the given figure, POQ is a line. Ray OR is perpendicular to line PQ . OS is another ray lying between rays OP and OR . Prove that $\square ROS = \frac{1}{2}(\square QOS - \square POS)$



- Q17. If a transversal intersects two parallel lines, then each pair of interior angles on the same side of the transversal is supplementary.
- Q18. Prove that the sum of three sides of a triangle is greater than the sum of the three medians of the triangle.
- Q19. If $A(3, 0)$, $B(0, 4)$ and $C(0, 0)$ are the vertices of a triangle, find out the length of AC (without plotting).
- Q20. Sides of a triangle are in the ratio $12:17:25$ and its perimeter is 540cm . Find its area.
- Q21. If $a = \frac{3-2}{3+2}$ and $b = \frac{3+2}{3-2}$, find the value of $a^2 + b^2 - 5ab$.
- Q22. Prove that $x^{\frac{1}{a-b} - \frac{1}{a-c} - \frac{1}{b-a} + \frac{1}{c-b}} = 1$
- Q23. If $a + 2b$ is a factor of $a^5 + 4b^2a^3 + 2a + 2b + 3$, find the value of b .
- Q24. Factorise: $3x^3 - 4x^2 - 7x + 2$
- Q25. If $a + b + c = 6$, find the value of $(2-a)^3 + (2-b)^3 + (2-c)^3 - 3(2-a)(2-b)(2-c)$
- Q26. Which of the number $1, -1, 3$ and -3 are zeroes of the polynomial $2x^4 + 9x^3 + 11x^2 + 4x - 6$.
- Q27. If the sides of a triangle are produced in order, prove that the sum of the exterior angles so formed is equal to four right angles.
- Q28. If one angle of a triangle is equal to the sum of the other two angles, show that the triangle is a right angled triangle.
- Q29. In the following figure, OP bisects $\angle AOC$, OQ bisects $\angle COB$ and $OP \perp OQ$. Show that A, O, B are collinear.
- Q30. In the given figure, AB and CD are parallel lines. The bisectors of interior angles on the same side of the transversal EF intersect at P . Show that $\angle GPH = 90^\circ$.



- Q31. Find the area of a triangle having perimeter 30cm , one side 12cm and difference of other two sides as 2cm .