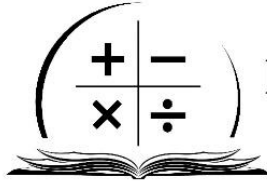


SCHOOL LEVEL EXAM (2024 – 2025)

 MATHS MARATHON Competition For Excellence	CLASS 9	
Total Questions : 50	Total Marks : 100	Time : 1 hour

INSTRUCTIONS TO THE STUDENT'S

1. Please do not open this question paper unless you are instructed to do so.
2. Additional 5 minutes will be given to the candidates for filling up the student's details before the start of the competition.
3. The paper consists of 5 different chapters of the textbook.
4. All questions are compulsory and consist of equal marks.
5. Each question is carrying 2 marks, there is no negative marking.
6. There is only one correct answer, hence mark one answer only.
7. Darken the circle with dark pencil or blue/black ball pen only.
8. Return the answer sheet along with the question paper to the supervisor at the end of the exam.
9. Extra Blank pages can be used for rough calculations

Name - _____

SCHOOL - _____

ROLL NO - _____ CLASS - _____

- Which of the following sets is equal to $\{1, 2, 3, 4\}$?
 A) $\{1, 2, 3\}$ B) $\{2, 4, 6\}$ C) $\{4, 3, 2, 1\}$
- If set $H = \{1, 2, 3, 4\}$, which of the following sets is not a subset of set H ?
 A) $\{3, 4, 5\}$ B) $\{1, 2, 3\}$ C) $\{1, 2\}$
- In a survey, if set A represents people who prefer tea and set B represents people who prefer coffee, what could be the universal set?
 A) All beverages B) All survey participants C) All hot beverages
- Out of 150 students in a school, 100 students like mathematics, and 90 students like science. If 60 students like both mathematics and science, how many students do not like either mathematics or science?
 A) 10 B) 20 C) 30
- Out of a group of 60 people, 35 people like to watch movies, and 25 people like to watch TV shows. If 15 people like both movies and TV shows, how many people do not like either movies or TV shows?
 A) 15 B) 10 C) 20
- Which property states that for any rational number a , $a \times 1 = a$?
 A) Associative property B) Identity property C) Distributive property
- Which of the following numbers is both rational and real?
 A) $\sqrt{2}$ B) π C) 0
- Which of the following is the approximate decimal representation of $\sqrt{21}$ rounded to two decimal places?
 A) 4.58 B) 4.59 C) 4.57
- Which of the following is a surd?
 A) $\sqrt{289}$ B) $\sqrt{258}$ C) $\sqrt{225}$
- Simplify $\sqrt{18} + \sqrt{18}$.
 A) $4\sqrt{2}$ B) $5\sqrt{2}$ C) $6\sqrt{2}$
- What are the coefficients of the polynomial $5x^3 - 2x^2 + 4x - 17$?
 A) 5, -2, 4, -17 B) 5, -2, 4 C) 5, -2
- Which type of polynomial is $3x + 2$?
 A) Linear polynomial B) Quadratic polynomial C) Cubic polynomial
- What is the standard form of the polynomial $2x^3 - 3x + 5x^2 + 1$?
 A) $2x^3 + 5x^2 - 3x + 1$ B) $2x^3 - 3x^2 + 5x + 1$ C) $2x^3 - 3x + 5x^2 + 1$

14. What is the result of adding $2x^3 + 3x^2 - 4x$ and $5x^2 - 2x + 7$?
 A) $7x^5 + 8x^4 - 6x^3 + 3x^2 - 6x + 7$ B) $2x^3 + 8x^2 - 6x + 7$ C) $2x^3 + 8x^2 - 6x$
15. What is the result of subtracting $2x^3 + 3x^2 + 4x$ from $5x^2 - 2x + 7$?
 A) $5x^2 - 2x + 7 - 2x^3 - 3x^2 + 4x$ B) $2x^3 + 2x^2 - 6x + 7$ C) $-2x^3 + 2x^2 - 6x + 7$
16. What is the product of $(2x + 3)$ and $(x^2 - 4)$?
 A) $2x^3 + 3x^2 - 8x - 12$ B) $2x^3 + 11x^2 - 8x - 12$ C) $2x^3 + 11x^2 - 8x + 12$
17. What is the quotient when $2x^3 + 3x^2 - 4x + 5$ is divided by $x - 2$?
 A) $2x^2 + 7x + 10 - \frac{10}{x-2}$ B) $2x^2 + 7x - 10 + \frac{33}{x-2}$ C) $2x^2 + 7x + 10 + \frac{25}{x-2}$
18. Find the value of the polynomial $3x^3 + 5x^2 - 2x + 1$ when $x = -2$.
 A) -9 B) 17 C) 1
19. Evaluate the polynomial $2x^3 - 3x^2 + 2x - 1$ at $x = 2$.
 A) 7 B) -5 C) 15
20. Determine the factor of the polynomial $2x^2 + 6x + 4$.
 A) $2(x + 2)$ B) $2(x + 1)(x + 2)$ C) $2(x^2 + 2x + 2)$
21. If points A, B, C, and D are collinear and $AB = 3$ units, $BC = 4$ units, and $CD = 5$ units, what is AD?
 A) 8 units B) 12 units C) 2 units
22. Points X, Y, and Z are collinear in a plane. If $d(X,Y) = 30$ units and $d(Y,Z) = 9$ units, what is $d(X,Z)$?
 A) 30 units B) 21 units C) 39 units
23. Given point A with coordinates $(-1, 4)$ and point B with coordinates $(3, -2)$, what is $d(A,B)$?
 A) $2\sqrt{13}$ B) $2\sqrt{41}$ C) $2\sqrt{15}$
24. If point A has coordinates $(-1, -3)$ and point B has coordinates $(4, 2)$, what is $d(A,B)$?
 A) $\sqrt{70}$ B) $\sqrt{65}$ C) $\sqrt{50}$
25. When segment AB measures 16 units and M is the midpoint of AB, what is the length of AM?
 A) 8 B) 4 C) 16
26. If the coordinates of points G(2, 1) and H(5, -2) are known, what is the distance between them?
 A) 5 units B) $3\sqrt{2}$ units C) 4 units

27. If the coordinates of points L(2, -3) and M(-4, 1) are provided, what is the distance between them?

A) $\sqrt{34}$ units

B) $\sqrt{52}$ units

C) $\sqrt{26}$ units

28. If the coordinates of two points are P(0, 0) and Q(8, 6), what is the distance between them?

A) 20 units

B) $\sqrt{100}$ units

C) 8 units

29. If the points are X(0, 0), Y(3, 1), and Z(6, 3), which point lies between the other two?

A) Y

B) X

C) Z

30. Given points P(1, -1), Q(5, 2), and R(8, 5), which point lies between the other two?

A) P

B) Q

C) R

31. What is the sum of consecutive interior angles formed when a transversal intersects two parallel lines?

A) 90°

B) 180°

C) 360°

32. Two parallel lines are intersected by a transversal. If measure of one of the alternate interior angles is 75° then the measure of the other angle is

A) 115°

B) 15°

C) 75°

33. In $\triangle XYZ$, if $\angle X = 45^\circ$ and $\angle Y = 60^\circ$, what is the measure of $\angle Z$?

A) 45°

B) 75°

C) 90°

34. If a transversal intersects two parallel lines, and one angle measures 80° , what is the measure of its alternate interior angle?

A) 180°

B) 100°

C) 80°

35. Two parallel lines are intersected by a transversal. If measure of one of the alternate interior angles is 75° then the measure of the other angle is

A) 105°

B) 15°

C) 75°

36. If two lines are parallel and a transversal intersects them, what is the sum of the angles on the same side of the transversal and on the same side of one of the parallel lines?

A) 180 degrees

B) 360 degrees

C) 90 degrees

37. If $\angle A = 80^\circ$ and $\angle B = 50^\circ$ in $\triangle ABC$, what is the measure of $\angle C$?

A) 30°

B) 50°

C) 100°

38. In the figure formed by two parallel lines intersected by a transversal, what is the sum of the interior angles marked as alpha and beta?

A) 180 degrees

B) 360 degrees

C) 90 degrees

39. If one of the angles formed by parallel lines and a transversal measure 110° , what is the measure of its corresponding angle?

- A) 70° B) 110° C) 180°

40. If two lines are parallel and a transversal intersects them, what is the sum of the angles on the same side of the transversal and on the same side of one of the parallel lines?

- A) 90 degrees B) 180 degrees C) 360 degrees

41. In triangle PQR, if angle P = 45° and angle R = 65° , what is the measure of angle Q?

- A) 70° B) 60° C) 80°

42. In triangle PQR, if angle P = 45° and angle Q = 60° , what is the measure of the exterior angle at vertex R?

- A) 105° B) 90° C) 75°

43. The measures of angles of a triangle are in the ratio 12 : 15 : 18. Find the measures of each angle.

- A) $60^\circ, 75^\circ, 90^\circ$ B) $72^\circ, 90^\circ, 108^\circ$ C) $48^\circ, 60^\circ, 72^\circ$

44. What is the ratio of the lengths of the sides in a $30^\circ - 60^\circ - 90^\circ$ triangle?

- A) $1 : \sqrt{3} : 2$ B) $1 : 2 : \sqrt{3}$ C) $\sqrt{3} : 1 : 2$

45. If the length of the shorter leg in a $30^\circ - 60^\circ - 90^\circ$ triangle is 5 units, what is the length of the longer leg?

- A) 5 units B) $5\sqrt{3}$ units C) 10 units

46. In triangle ABC, if angle B = 60° and angle C = 50° , what is the measure of the exterior angle at vertex A?

- A) 70° B) 100° C) 110°

47. In triangle XYZ, if angle X = 80° and angle Y = 60° , what is the measure of angle Z?

- A) 40° B) 50° C) 100°

48. The measures of angles of a triangle are in the ratio 10 : 15 : 18. Find the measures of each angle.

- A) $60^\circ, 90^\circ, 108^\circ$ B) $41.8^\circ, 62.7^\circ, 74.8^\circ$ C) $80^\circ, 120^\circ, 144^\circ$

49. In triangle PQR, if angle P = 70° and angle Q = 60° , what is the measure of the exterior angle at vertex R?

- A) 130° B) 90° C) 40°

50. In triangle LMN, if angle L = 55° and angle N = 75° , what is the measure of angle M?

- A) 50° B) 40° C) 60°

ANSWER SECTION

No.	Ans	No.	Ans	No.	Ans	No.	Ans	No.	Ans
1	C	11	A	21	B	31	B	41	A
2	A	12	A	22	C	32	C	42	A
3	B	13	A	23	A	33	B	43	C
4	B	14	B	24	C	34	C	44	A
5	A	15	C	25	A	35	C	45	B
6	B	16	A	26	B	36	A	46	C
7	C	17	C	27	B	37	B	47	A
8	A	18	C	28	B	38	A	48	B
9	B	19	A	29	A	39	B	49	A
10	C	20	B	30	B	40	B	50	A