INDIAN SCHOOL AL WADI AL KABIR

Mid Term Examination (2025-26)

ANSWER KEY

Class: VIII   Sub: MATHEMATICS   Max Marks: 80
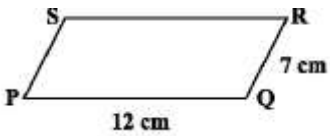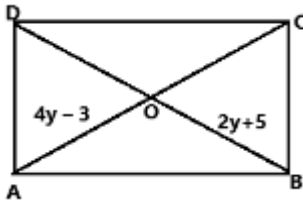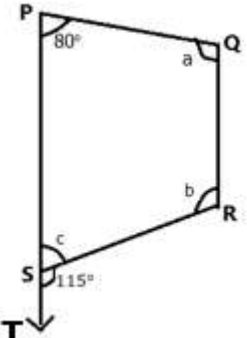
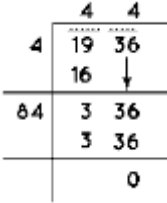Date: 23-09-2025   Set-1   Time: $2\frac{1}{2}$ hours

	Section A: Multiple Choice Question (Q.1 to Q.15) of **1** mark each						
1.	The value of k, if $7^{k-2} \times 7^8 = 7^{10}$ is:						
	A		**B**	4	**C**		**D**
2.	Multiplying $\frac{-15}{7}$ by the reciprocal of $3\frac{4}{7}$, we get:						
	A		**B**		**C**	$\frac{-3}{5}$	**D**
3.	The standard form of $\frac{-84}{-126}$						
	A		**B**		**C**		**D**	$\frac{2}{3}$
4.	The value of $5^{-1} \times 2^{-1} \times 10$ is:						
	A		**B**		**C**	1	**D**
5.	Number of digits in the square root of 53361 is:						
	A		**B**	3	**C**		**D**
6.	The value of $\left[\left(\frac{5}{7}\right)^{-2}\right]^0$ is:						
	A	1	**B**		**C**		**D**
7.	The value of $\frac{\sqrt{0.2 \times 0.2 \times 5 \times 5}}{\sqrt{7 \times 3 \times 7 \times 3}}$ is:						
	A	$\frac{1}{21}$	**B**		**C**		**D**

8.	The square root of which of the following numbers will end with 9?							
A		**B**		**C**	4761	**D**	

9.	Frame the equation which represents the statement: "3 subtracted from twice of a number is equal to 18".							
A		**B**		**C**		**D**	$2m - 3 = 18$

10.	A bag contains 3 red balls, 5 black balls and 4 white balls. A ball is drawn at random from the bag. What is the probability that the ball drawn is white?							
A		**B**		**C**	$\dfrac{1}{3}$	**D**	

11. Name the property used: $\dfrac{7}{9} \times \dfrac{9}{7} = 1$

A		**B**	Multiplicative inverse	**C**		**D**	

12.	Two numbers are in the ratio 7: 3. If they differ by 16. Find the greatest number.							
A		**B**	28	**C**		**D**	

13.

The perimeter of parallelogram PQRS is:

A	38cm	**B**		**C**		**D**	

14.	If the measure of each exterior angle of a regular polygon is 40°, then that regular polygon has _____ number of sides.							
A		**B**		**C**	9	**D**	

15. The solution of $5m + 9 = 5 + 3m$ is:

A		**B**		**C**		**D**	-2

Q16.	SOURCE BASED QUESTION						
	The adjoining pie chart shows the hobbies preferred by a group of young people in a city. Study the chart carefully and answer the following questions: From this pie chart, answer the following questions:						

I	Which hobby is liked by the maximum number of young people?						
	A		**B**	music	**C**		**D**

II	If the total number of young people surveyed is 2000, how many of them prefer sports?						
	A		**B**		**C**		**D**	500

III	Find the degree measure of the angle represents reading? If 2000 surveyed						
	A		**B**	72°	**C**		**D**

IV	How many people liked travelling? If 4200people surveyed.						
	A		**B**		**C**		**D**	630

V	Find the number of people liked other hobbies, if 4000 people surveyed?						
	A		**B**	400	**C**		**D**

Section B: Short Answer Questions (Type – 1) of **2** marks each (Q.17 to Q.21)

17.	Insert rational numbers $\frac{-3}{5}$, $\frac{1}{5}$ and 1 on the same number line. No. line: (½ m), each point (½ + ½ + ½)
18.	The sum of two numbers is 85, if one exceeds other by 25 $$x, x+25$$ $$x + x + 25 = 85$$ $$2x + 25 = 85$$ $$2x = 85 - 25 = 60$$ X= 30, so the numbers are 30, 55
19.	Evaluate: $(5^3)^{-2} \times \{5^{11} \div 5^3\} + 5$ $5^{-6} \times 5^8 + 5$ (½ + ½) $= 5^2 + 5 = 30$ (½ + ½)

20.	Write a Pythagorean triplet whose one number is 16. 2m=16 m=16/2= 8 (½) $m^2 - 1 = 8^2 - 1 = 64 - 1 = 63$ (½ +½) $m^2 + 1 = 8^2 + 1 = 64 + 1 = 65$ (½)
21.	ABCD is a rectangle. The diagonals intersect at O. If AO = 4y − 3 and OB=2y+5, find the value of y. $4y - 3 = 2y + 5$ (½) $4y - 2y = 5 + 3 = 8$ (½) $2y = 8$ $y = \frac{8}{2} = 4$ (½)

Section C: Long Answer Questions (Type – 1) of **3** marks each (Q.22 to Q.27)

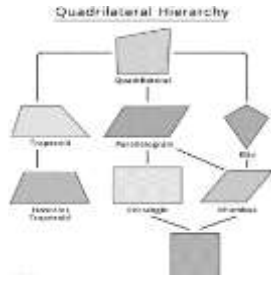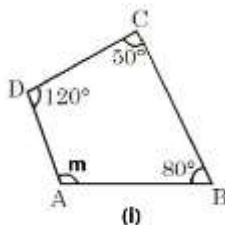|	
22.	PQRS is a trapezium with QR ∥ PS, find the value of a, b and c. $c = 180° - 115° = 65°$ {linear pair} {½+½} $a = 180° - 80° = 100°$ {co − interior angles} {½+½} $b = 180° - 65° = 115°$ {co − interior angles} {½+½}
23.	Solve: a) $3(m - 3) = 5(2m + 1)$ $3 m - 9 = 10m + 5$ {½+½} $3 m - 10m = 5 + 9$ {½+½} $-7m = 14$ (½) $m = \frac{14}{-7}$ = -2 (½)

24.	Find the value using distributive property: $\left[\frac{-5}{11} \times \frac{4}{9}\right] + \left[\frac{-5}{11} \times \frac{5}{18}\right]$

$\frac{-5}{11} \times \left[\frac{4}{9} + \frac{5}{18}\right]$ (½ m)

$\frac{-5}{11} \times \left[\frac{4\times2}{9\times2} + \frac{5}{18}\right]$ (½ + ½ m)

$\frac{-5}{11} \times \left[\frac{8}{18} + \frac{5}{18}\right]$ (½ m)

$= \frac{-5}{11} \times \left[\frac{13}{18}\right]$ $= \frac{-65}{198}$ (½ m+ ½ m)

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25. The members of a sports club decided to buy new jerseys. Each member contributed as many rupees as the number of members in the club. If the total contribution was ₹7056, find the number of members in the club.

Let the number of members in the club be ' x '   (½ m)
And the contribution of each member   ₹ ' x '
    $x \times x = 7056$ (½ m)
$x = \sqrt{7056} = 84$ (either prime factorisation or division method)   (2m)

26.

Simplify using the laws of exponents: $\frac{81^{-1} \times 10^6 \times m^{-2}}{3^{-4} \times 125 \times m^{-5}}$

$\frac{3^4 \times 10^6 \times m^5}{81 \times 125 \times m^2}$ (½ + ½ +½)

$= \frac{2^6 \times 5^6 \times m^5}{5^3 \times m^2}$ (½ +½)

$= \frac{2^6 \times 5^3 \times m^3}{}$ (½)

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27. Find the square root of 1936 by division method.

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        4   4
    -------  -----
  4 | 19  36
    | 16    ↓
  84| 3  36
    | 3  36
    ----------
           0
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getting first quotient: 4 (2m)
Second part (1m)

	Section D: Long Answer Questions (Type – 2) (Q.28 to Q.33) & Case study (Q.34 &35) of **4** marks each
28.	Find the value of $\left[\left(\frac{3}{5}\right)^{-2}\right]^3 \times \left[\left(\frac{5}{3}\right)^{-2}\right]^3 + \left[\frac{1}{7}\right]^{-2} - \left[\frac{1}{5}\right]^{-2}$ $\left(\frac{3}{5}\right)^{-6} \times \left(\frac{3}{5}\right)^6 + \left[\frac{7}{1}\right]^2 - \left[\frac{5}{1}\right]^2$ (½ + ½ +½ + 1/2) $= \left(\frac{3}{5}\right)^0 + 49 - 25$ (½ + ½ +½) $=1+49 - 25 = 25$ (½)
29.	Check the number 6480 is a perfect square number or not. If not, find the smallest number by which it must be divided so that the quotient is a perfect square. Find the square root of the quotient obtained. Prime factors of 6480 = 2 × 2 × 2 × 2 ×3 ×3 × 3 × 3× 5 (½ + ½ +½ + ½+ ½) We can clearly see that each prime factor is in pair but not 5 Least no.to be divided = 5 (½) Required sq.rt = 2× 2 × 3× 3=36 (½+ 1/2)
30.	Find any five rational numbers between $\frac{-7}{8}$ and $\frac{-8}{9}$. L.C.M = 72 (½) $\frac{-7\times9}{8\times9} = \frac{-63\times10}{72\times10} = \frac{-630}{720},$ $\frac{-8\times8}{9\times8} = \frac{-640}{720}$ (½ + ½ +½ + ½) Write any five rational numbers.
31.	The sum of three consecutive multiples of 11 is 231. Find the multiples. Frame an algebraic equation and solve it. Let the multiples be: $x , x + 11, x + 22$ (½ m) $x + x + 11 + x + 22 = 231$ (½ m) $3x = 231 - 33 = 198$ $x = \frac{198}{3} = 66,$ (½ m) so multiples are 66 77,88(½ m)
32.	ABCD is a parallelogram. Find the value of w, x, y and z Z= $75°${opposite angles are equal} (1m) Z=w=75°{alternate interior angles} (1m) 75+50+y = 180 (½+½) Y=180−125 = 55 (½) Y = x = 55 (alternate interior) (½)

33.	A library has 200 story books in different categories as shown below. Draw a pie chart to represent the distribution of books.

Category	Adventure	Mystery	Fantasy	Science fiction	historical
Number of books	35	55	50	40	20

Each sector   (½) × 5 = 2 ½,   Circle (½), table (1m)

34.

Case Study-1

i) Amit spins the colour wheel painted with VIBGYOR colours. What is the probability that the wheel stops at green? (1m)

P(green) = $\frac{1}{7}$ (1m)

ii) Sreenu tosses two fifty-paisa coins simultaneously. What is the probability of getting **two heads** at the same time?

P(HH) = $\frac{1}{4}$ (1m)

iii) Suni draws a strip at random from a well-shuffled box containing number strips from **9 to 20**. What is the probability that the number is a **multiple of 3**? (2m)

{9,12,15, 18} (½)+ (½)

P(multiple of 3) = $\frac{4}{12}$ = $\frac{1}{3}$ (½)+ (½)

35.

Case Study-2

A group of students were drawing a chart based on the topic of properties of quadrilaterals.

They were writing different properties of few quadrilaterals and asking questions each other. Few of their figures are given below. Answer the following questions on the basis of each figure .

i) Name the quadrilaterals whose diagonals are of equal length. (1m)

Ans: Square and Rectangle (½)+ (½)

ii) If each interior angle of a regular polygon measures 135°, find the measure of its each exterior angle. (1m)

180 – 135=45° (½)+ (½)

iii) ABCD is a quadrilateral. Find the value of 'm '. (2m)

80+50+120 +m = 360° (1)

250+m = 360 (½)

m = 360 − 250 =110° (½)

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