

BUDHA DAL PUBLIC SCHOOL PATIALA
FIRST TERM EXAMINATION (6 September 2024)
MATHEMATICS

Class - VIII

(Set - B)

Time Allowed: 3 hours

Maximum Marks: 80

Instructions:

1. All questions are compulsory.
2. Section - A : Q.No. 1 to 10 carry 1 mark each (M.C.Q.)
3. Section - B : Q.No. 11 to 20 carry 2 marks each
4. Section - C : Q.No. 21 to 30 carry 3 marks each
5. Section - D : Q.No. 31 to 35 carry 4 marks each

SECTION-A

1.	The value of $(3^{-1} + 2^{-1})^0$ is a) 3 b) $\frac{1}{2}$ c) $\frac{1}{6}$ d) 1	1
2.	Product of $3a^6 \times 7a^4$ is a) $10a^{24}$ b) $21a^{10}$ c) $21a^4$ d) $10a^{10}$	1
3.	Which of the following numbers would not have digit 6 at unit place? a) $(24)^2$ b) $(16)^2$ c) $(61)^2$ d) $(46)^2$	1
4.	The number of digits in the square root of 4532560 is a) 4 b) 3 c) 5 d) 6	1
5.	If $5y - 1 = 0$ then value of y is a) 5 b) $\frac{1}{5}$ c) 1 d) -5	1
6.	The multiplicative inverse of $\frac{2}{3}$ is a) $-\frac{2}{3}$ b) $-\frac{3}{2}$ c) $\frac{3}{2}$ d) none	1
7.	The quadrilateral whose diagonals are equal is a) parallelogram b) rhombus c) rectangle d) trapezium	1
8.	The rational numbers are not associative under a) addition b) multiplication c) subtraction d) none	1
9.	5% of 140 is a) 10 b) 12 c) 7 d) 2	1
10.	The reciprocal of the rational number $(\frac{7}{5})^{-2}$ is a) $(\frac{7}{5})^2$ b) $(\frac{5}{7})^2$ c) $(\frac{-7}{5})^2$ d) none	1

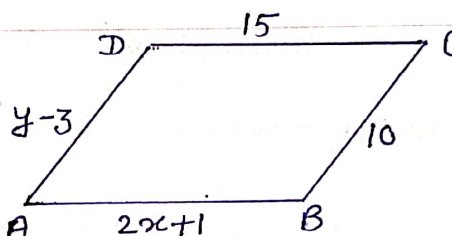
SECTION-B

11. The price of an article is Rs. 45,000. The sale tax charged on it is at the rate of 15%. Find the amount that Suresh will have to pay if he buys it. 2
12. Simplify and solve the following linear equation 2
 $4(x + 3) - 3(x + 1) + 2(x - 1) = 0$
13. Find 'm' so that $(-5)^{m+1} \times (-5)^7 = (-5)^{15}$ 2
14. Solve $\frac{5y-7}{2} = \frac{y+1}{7}$ 2
15. Simplify by using appropriate property $-\frac{2}{5} \times \frac{3}{7} - \frac{1}{14} - \frac{2}{5} \times \frac{4}{7}$ 2
16. Find the square root of 1296 by prime factorization method. 2
17. Name the property used in the following: 2

a) $\left(\frac{-2}{3}\right) + \left(\frac{5}{6}\right) = \left(\frac{5}{6}\right) + \left(\frac{-2}{3}\right)$

b) $\frac{3}{5} \times \left(\frac{5}{7} \times \frac{1}{2}\right) = \left(\frac{3}{5} \times \frac{5}{7}\right) \times \frac{1}{2}$

18. The given figure 'ABCD' is a parallelogram. Find x and y

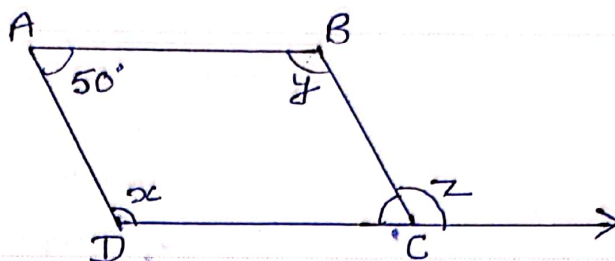


19. Subtract $3x^2 - 2y^2 + xy$ from $2x^2 + 5y^2 - 3xy$ 2
20. a) Express 4.9327×10^4 in usual form. 2
 b) Write 0.0002569 in standard form.

SECTION-C

21. Solve the following linear equation 3
 $\frac{5x}{2} - \frac{x}{4} + \frac{3x}{2} = 14$
22. Simplify $y(y^2 - y + 1) + 3$ and find its value when $y = 1$ 3
23. Arun bought a pair of skates at a sale where the discount given was 20%. If the amount he pays is Rs. 1600. Find the marked price. 3
24. Evaluate $\frac{25 \times t^{-4}}{5^{-3} \times 10 \times t^{-8}}$, ($t \neq 0$) using exponential laws 3
25. Is 2352 a perfect square? If not, find the smallest multiple of 2352 which is a perfect square. 3
 Find the square root of the new number,

26. In figure ABCD is a parallelogram
Find x, y, z



27. Fill in the blanks:

- Reciprocal of -3 is _____
- Additive inverse of $\frac{4}{5}$ is _____
- The numbers _____ and _____ are their own reciprocals.

28. Find the amount and the compound interest on Rs. 14000 for 2 years at the rate of 5% per annum compounded annually.

29. State True or False

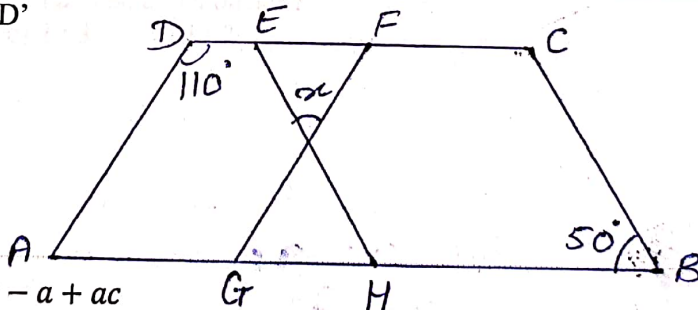
- All squares are trapeziums.
- All kites are rhombuses.
- Minimum value of the interior angle of a regular polygon is 60° .

30. Find the smallest square number that is divisible by each of the numbers 6, 9 and 15.

SECTION-D

- Write a Pythagorean triplet if one member is 12.
- Find the least number which must be added in 1825 to get a perfect square.

32. In the following figure both 'AGFD' and 'EHBC' are parallelogram.
Find the value of x



- Add $a - b + ab$, $b - c + bc$, $c - a + ac$
- Subtract $3xy + 5yz - 7zx$ from $5xy - 2yz - 2zx$

Case Study Questions

34. If 60% people in a city like cricket, 30% like football and the remaining like other games. If total number of people is 50 lakh then answer the following questions:

- How many people like cricket?
 - 15 lakh
 - 30 lakh
 - 5 lakh
 - 50 lakh

- 2) How many people like cricket and football both?
a) 50 lakh b) 40 lakh c) 45 lakh d) 5 lakh
- 3) Find the ratio of people like cricket to other games.
a) 6 : 1 b) 2 : 1 c) 3 : 1 d) none
- 4) What percentage of people like other games?
a) 60% b) 30% c) 50% d) 10%

35. A teacher shows four articles of different weight (cube, book, bucket and a bag) in a class room. The difficulty is that weight tags are in exponential form. The weight of articles are as follows:

4

$$\begin{aligned}\text{Cube} &= (2^3 + 3^0) \text{ kg} \\ \text{Book} &= 2^{-1} \text{ kg} \\ \text{Bucket} &= (2 \times 3^2 \times 1) \text{ kg} \\ \text{Bag} &= (2^0 + 3^0 + 5^0)^3 \text{ kg}\end{aligned}$$

Answer the following:

- 1) What is the weight of the book?
a) 2 kg b) $\frac{1}{2}$ kg c) (2×2) kg d) none
- 2) What is the sum of weight of a cube and a bucket?
a) 9 kg b) 27 kg c) 18 kg d) 2 kg
- 3) What is the product of weight of a bag and a cube?
a) (18×27) kg b) $\frac{1}{2}$ kg c) (27×9) kg d) none
- 4) What is the ratio of weight of a cube and a bucket?
a) 1 : 2 b) 9 : 2 c) 2 : 3 d) 3 : 2