

HOLIDAY HOMEWORK (2026-27)

CLASS-VIII

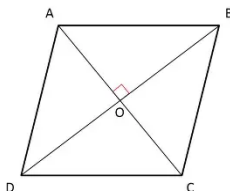
SUBJECT- MATHEMATICS

“Math is the language of the universe. So, the more equations you know, the more you can converse with the cosmos.” – Neil deGrasse Tyson

INSTRUCTIONS:

- All questions are compulsory.
 - Work should be neat and clean.
 - Write tables from 2 to 20 (10 times).
1. Find the square root of 7569 using the prime factorization method.
 2. By what least number should 2028 be divided to make it a perfect square? Also find the square root of the number obtained.
 3. How many non-perfect square numbers lie between 250' and 251'?
 4. The square of a two-digit number is 4225. Find the number using:
 - (i) Prime factorization method
 - (ii) Long division method.
 5. By what smallest number must 39600 be divided to make it a perfect square? Find the square root of the resulting number.
 6. A farmer has a square field of area 3136 m^2 . He wants to plant trees in equally spaced rows and columns such that the number of trees along each side is equal. How many trees will be there in total in each row?
 7. Write the number 47561 using powers of 10 in its expanded form.
 8. Write 561.903 using powers of 10.
 9. Express the following numbers in standard form:
 - a. (i) 59,853
 - b. (ii) 34,30,000
 - c. (iii) The distance between the Sun and Saturn: 14,33,50,00,00,000 m.
 - d. (iv) The mass of the Earth: 59,76,00,00,00,00,00,00,00,000 kg.
 10. The distance between the Sun and Earth is $1.496 \times 10^{11} \text{ m}$. The distance between the Sun and Saturn is $1.4335 \times 10^{12} \text{ m}$. Which of these two distances is smaller? Explain your reasoning using scientific notation principles.
 11. Explain why the exponent y in scientific notation ($x \times 10^y$) is often considered more important than the coefficient x.
 12. Calculate and write the answer using scientific notation for the following:

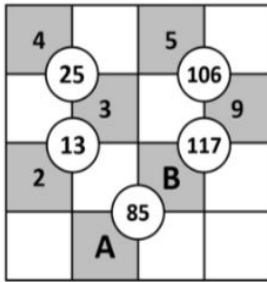
- (i) How many ants are there for every human in the world? (Global human population = 8×10^9 , global ant population = 2×10^{16})
- (ii) If each tree had about 10^4 leaves, find the total number of leaves on all the trees in the world. (Estimated number of trees globally = 3×10^{12})
- (iii) If one star is counted every second, how long would it take to count all the stars in the observable universe? (Estimated number of stars = 2×10^{23})
- (iv) There are about 100 million bee colonies in the world. Find the number of honeybees if each colony has about 50,000 bees.
13. Two adjacent angles of parallelogram are in the ratio 7:2. Find the measure of all the angles of parallelogram.
14. The longest side of a parallelogram is 8 cm if the shortest side is $\frac{3}{4}$ of the longest side, find the perimeter of the parallelogram.
15. Three angles of a quadrilateral are 100° , 50° and 50° respectively. Find the measure of the fourth angle.
16. If one of the diagonals of a rhombus is equal to one of its sides, find the angles of the rhombus.
17. The angles of the quadrilateral are $2x + 3^\circ$, $x + 7^\circ$, $3x - 5^\circ$ and $2x + 11^\circ$. Find the measure of each angle of the quadrilateral.
18. Prove that the diagonals of a rhombus bisect each other at right angles as given in the figure



19. Construct a quadrilateral ABCD in which $AB = 4.5$ cm, $BC = 3.2$ cm, $\angle A = 60^\circ$, $\angle B = 105^\circ$ and $\angle D = 90^\circ$.
20. Construct a quadrilateral PQRS in which $PQ = QR = 4$ cm, $\angle P = 60^\circ$, $\angle R = 60^\circ$ and $\angle Q = 120^\circ$

Chapter 1: A Square and a Cube

1. In the following grid, all the circles follow the same theme. What will be the value of $A + B$?



- a) 12 b) 14 c) 13 d) 15

2. Sam writes a list of natural numbers. The list has three perfect cubes and three perfect squares. If no number in the list has more than two digits, what is the MINIMUM number of distinct numbers he must have written?

- a) 3 b) 4 c) 5 d) 6

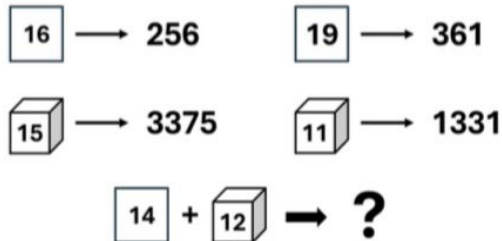
3. If AB is a two-digit number whose cube is in the form of a 4-digit number “___ C” such that $A < C < B$, how many different values can C have?

- a) 2 b) 3 c) 4 d) More than 4

4. $56 \times k$ is a perfect cube where k is a natural number. What could be the smallest possible value of k ?

- a) 36 b) 49 c) 56 d) 72

5. Each geometrical shape denotes a certain operation. What will come in place of “?”



- a) 2888 b) 1914 c) 1924 d) 340

6. XYZ is a 3-digit number such that it is the square of a multiple of 5. What will be the HIGHEST possible remainder of $(XYZ)/100$?

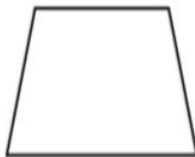
- a) 10 b) 15 c) 20 d) 25

Chapter 4: Quadrilaterals

1. Raj colored the following shapes (Trapezium, Parallelogram, Square, Kite) in Red, Yellow, Green, and Blue, not necessarily in the same order.

- The shape colored in Red has no parallel sides
- The shape with each of its angles equal to 90° , is not Yellow
- The shape with two pairs of parallel sides is not Green

Which shape did he color in yellow?



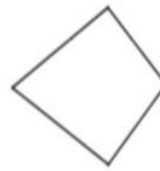
a) Trapezium



b) Parallelogram



c) Square



d) Kite

2. How many quadrilaterals are there in the given figure?



a) 8

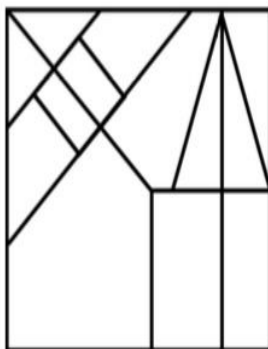
b) 9

c) 10

d) 11

3. How many rectangles are there in the given figure?

Note: For the purpose of this question, please count all squares also as rectangles



a) 8

b) 9

c) 10

d) 11

4. In the given tangram, how many quadrilaterals are made with exactly 3 colored tiles?



a) 4

b) 3

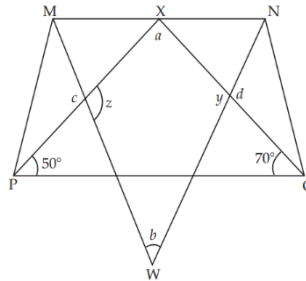
c) 2

d) 1

CASE STUDY QUESTIONS

1. There is a trapezium MNOP, angle bisector of $\angle M$ and $\angle N$ meet at point W, and angle bisector of $\angle O$ and $\angle P$ meet at point X on side MN of trapezium MNOP.

By using the figure give the answers to following questions:



2.

- A. What is the value of a?
 - (a) 80°
 - (b) 60°
 - (c) 90°
 - (d) 70°
- B. What is the value of d?
 - (a) 70°
 - (b) 60°
 - (c) 80°
 - (d) 90°
- C. What is the value of c?
 - (a) 90°
 - (b) 70°
 - (c) 50°
 - (d) 80°
- D. What type of triangle is POX?
- E. What is the value of b?

2. During dance practice in school 6570 students of different schools are arranged in rows such that the number of students in each row is equal to the number of rows. In doing so, the instructor finds out that 9 children are left out. Find the number of children in each row of the square. What is the value depicted from the exercise?

- A. How many students were left out in arrangement?
 - (a) 9
 - (b) 10
 - (c) 11
 - (d) 15
- B. What is the number of students forming a square?
 - (a) 6250
 - (b) 6760
 - (c) 6561
 - (d) 6769

- C. When arranged for dance, number of students are equal to.
- Number of columns
 - Number of rows
 - Number of classes
 - None of these
- D. Find the number of children in each row of the square.
3. Mohan has to prepare a physics project in form of a cubical box for a social work campaign but he had a cuboidal box of sides 4 cm, 2 cm, 4 cm. Now he has to change it in the form of cube so that he can complete his project. For this, he needed more cuboids so that he can make his project in form of cube.
- A. What is the volume of the cuboidal box?
- 21 cm^3
 - 32 cm^3
 - 23 cm^3
 - 42 cm^3
- B. In which form of the group should be the side of cube?
- Triples
 - Squares
 - Singles
 - none of these
- C. How many cuboids are more needed?
- 20
 - 10
 - 16
 - 25
- D. How can we change cuboid into cube?
4. How will we calculate number of cubes needed to make it a perfect cube? In a class science teacher give some information to all students about Solar system in following manner.
- Distance of earth from sun = 149600000 km
 Mass of earth = 5970000000000000000000 kg
 Mass of Mars = 6420000000000000000000000 kg
 Mass of sun = 1990000000000000000000000000 kg
 Mass of moon = 7350000000000000000000 kg
- A. Write distance of earth from sun in standard form?
- $1.496 \times 10^8 \text{ km}$
 - $14.96 \times 10^8 \text{ km}$
 - $1.496 \times 10^9 \text{ km}$
 - $14.96 \times 10^9 \text{ km}$
- B. Write mass of sun in standard notation?
- $19.9 \times 10^{28} \text{ kg}$
 - $1.99 \times 10^{28} \text{ kg}$
 - $1.99 \times 10^{30} \text{ kg}$
 - $19.9 \times 10^{30} \text{ kg}$
- C. Mass of earth in standard notation:
- $5.97 \times 10^{24} \text{ kg}$
 - $59.7 \times 10^{24} \text{ kg}$
 - $5.97 \times 10^{26} \text{ kg}$
 - $59.7 \times 10^{26} \text{ kg}$
- D. Calculate the total mass of earth and moon.

E. Calculate difference of mass of mars from mass of sun?

CREATIVE CORNER

- ❖ Prepare a mind map of each:
Chapter-1 (A square and a cube)
Chapter-2 (Power Play)
Chapter-4 (Quadrilaterals)

Note: Use A3- sheet to present the mind map of each of the chapters with key concepts in a clear, neat and creative manner.

ART-INTEGRATED PROJECT

Tribal communities-their culture food and dress of Manipur
--