ARMY PUBLIC SCHOOL, DAGSHAI
CLASS VIII MATHS HOLIDAY HOMEWORK
Solve the following in a thin note book or in Maths register.

Rational number
1. Insert six rational numbers between   (i) -1/4 and -2/5   (ii) 21/12 and 12/21
2. What is the additive and multiplicative inverse of 3/5
3. Represent the following rational numbers on the number line.
   (i) 3/10   (ii) 8/7   (iii) 1.34   (iv)21/7
4. Find +(-)*12

UNDERSTANDING QUADRILATERALS
1. One angle of a parallelogram is of measure 70°. Find the measures of the remaining angles of the parallelogram.
2. The perimeter of a parallelogram is 150 cm. One of its side is greater than the other by 25 cm.
   Find length of all sides of the parallelogram.
3. Lengths of adjacent sides of a parallelogram is 3 cm and 4 cm. Find its perimeter.
4. In a parallelogram, the ratio of the adjacent sides is 4 : 5 and its perimeter is 72 cm then, find the sides of the parallelogram.

Linear Equations in One Variable-Sample Questions
1. Solve $x/3 + 1/5 = x/2 - ¼$
2. Find x for the equation: $(2 + x)(7 - x)/(5 - x)(4 + x) = 1$
3. A number is such that it is as much greater than 45 as it is less than 75. Find the number.
4. Divide 40 into two parts such that 1/4th of one part is 3/8th of the other.
5. The digits of a 2-digit number differ by 5. If the digits are interchanged and the resulting number is added to the original number, we get99. Find the original number

VISUALISING SOLID SHAPES
1. A polyhedron has 30 edges and 12 vertices. How many faces does it have?
2. A polyhedron has 5 faces and 6 vertices. How many edges does it have?

Squares and Square Roots
1. Write a Pythagorean triplet whose smaller member is 6.
2. Find the value of
3. Express 49 as the sum of seven odd numbers.
4. Is 2352 a perfect square? if not, find the smallest number by which 2352 must be multiplied so that the product is a perfect square. Find the square root of new number.
5. The area of a square field is 8281 m2. Find the length of its side.

Practical Geometry
1. Construct a quadrilateral ABCD, where AB = 4.3 cm, BC = 5.2 cm, CD = 6.5 cm, ∠B = 105° and ∠C = 60°.
2. Construct a quadrilateral PQRS where PQ = 5.4 cm, ∠P = 60°. ∠Q = 105°, ∠R = 75° and ∠S = 120°.
3. Construct a rhombus whose diagonals are 4.8 cm and 6.3 cm.
4. Draw a parallelogram whose adjacent sides are 2.8 cm and 3.8 cm.

Mensuration
1. In a building there are 24 cylindrical pillars with each having a radius 28 cm and height 4 m. Find the cost of painting the curved surface area of all pillars at the rate of Rs. 8 per meter square.
2. Find the height of cylinder whose radius is 7 cm and total surface area is 968 cm^2.

3. A box is in the form of cuboid of dimensions (80*30*40) cm. The base the side faces and back faces are to be covered with a coloured paper. Find the area of paper needed.
4. The lateral surface area of a hollow cylinder is 4224 cm^2. It is cut along its height and formed a rectangular sheet of width 33 cm. find the perimeter of rectangular sheet.
5. A roller takes 750 complete revolutions to move once over a level of road. Find the area of road if the diameter of the roller is 84 cm and length is 1 m.

Factorisation
1. By which of the following $a^4 - b^4$ be divided to get quotient $(a^2 + b^2)(a - b)$ and, remainder as 0.
   a. (a) $a^2 + b^2$
   b. (b) $a - b$
   c. (c) $a + b$
   d. (d) $a^2 - b^2$
2. Is $(a - 1)(b - 1)$ the factorisation of $(ab - a - b + 1)$ or $(ab - a + b - 1)$?
3. Simplify: $4x^2y^2(3z - 24)$, $36xy(z - 8)$
4. Divide: $81x^3(50x^2 - 98)$ by $27x^2(5x + 7)$

Exponents and Powers
1. Simplify $(1 / 3^2)^3$.
2. Evaluate: $(5^{-1} * 8^2) / (2^{-3} * 10^{-1})$.
3. Find the value of 'm' for which $6^m / 6^{-3} = 6^{5?}$
4. The size of a plant cell is 0.00001275 m. express it in standard form.

Cubes and Cube Roots
1. What is the smallest number by which 288 must be multiplied so the product is a perfect cube?
2. Find the cube of 4/5.
3. Show that 0.001728 is a cube root of a rational number.
4. Find the sides of a cubical box whose volume is 64 cm^3.
5. If the surface area of a cube is 486 cm^2, find its volume.
6. Find the volume of a cube whose surface area is 96 cm^2.

COMPARING QUANTITIES
1. What amount has to paid to on a loan of Rs 12000 for 1½ years at 10% per annum compounded half yearly.
2. The population of a city was Rs20,000 in 1997. It increased at the rate of 5% per annum. Find the population of city at the end of the year 2000.
3. A fan is marked ar Rs 15600 and it is available for Rs 12480. Find the discount given and discount percent
4. What should be the current price of the box which was Rs 25000 last year and it increased by 20% this year.
5. Find the population of a city after 2 years, which is at present is 20 lakh, if the rate of increase is 5%p.a.

Algebraic Expressions and Identities
1. Find $(2x + 3y)^2$ using algebraic identities.
2. Using suitable identities find $(1092)^2$.
3. Find 194 * 206 using suitable identity.
4. The length and breadth of a rectangle are $3x^2 - 2$ and $2x + 5$ respectively. Find its area.