

## Worksheet-4

### Subject-Mathematics

### Class- VIII

### Chapters-4, 7, 9,10,11,13, 14, 15

#### CUBES and CUBE ROOTS

Q1 which of the following are perfect cubes?

i)400 ii)9000 iii)2025 iv)15625 v)3375 vi)6859

Q2 Find the smallest number by which each of the following numbers must be divided to obtain a perfect cube.

a) 704 b) 128 c) 1188 d) 53240

Q3 Find the smallest no. by which each of the following no. must be multiplied to obtain a perfect cube.

a) 68600 b) 53240 c) 128 d) 704

Q4 Find the one's digit of the cube of the following nos.

a)3331 b)8888 c)149 d)1005 e)77 f)5022 g)1024 h)1000

Q5 Find the cube root of the following nos. by prime factorization method.

a)15625 b)512 c)27000 d)343

#### PRACTICAL GEOMETRY

Q1 construct a rhombus whose diagonals are 6cm and 7.5cm.

Q2 Construct a quadrilateral PQRS in which PQ=3.6cm, QR=5.4cm,LP=105° and LR=120°.

Q3 Construct a square whose diagonal is 5.4cm.

Q4 Construct a llgm ABCD in which AB=8cm, AD=5.1cm and LA=120°.

#### VISUALISING SOLID SHAPES

Q1 If a polyhedron has 6 faces and 8 vertices, finds its no. of edges.

Q2 A polyhedron has 30 edges and 20 vertices. Find the no. of its faces.

Q3 Write the no, of vertices, faces and edges of polyhedron and cylinder. Verify Euler's Formula also.

### **MENSURATION**

Q1 The area of a trapezium is 180 sq.m and its height is 12m. If one of the parallel sides is double the other, find the length of its parallel sides.

Q2 Find the total surface area of the cube whose edge measures 22m.

Q3 A room is 10m, 8m and 5m. Find the area of its 4 walls and the floor.

Q4 Find the TSA and CSA of a right circular cylinder of height 15cm and whose base radius is 7cm.

Q5 The CSA of a right circular cylinder of height 14cm is  $88\text{cm}^2$ . Find the diameter of the base of the cylinder.

Q6 The surface area of a cuboids is  $1372\text{cm}^2$ . The dimension of the cuboids is in the ratio 4:2:1. Find its dimensions.

### **DIRECT and INVERSE PROPORTION**

Q1 An electric pole 14m high, casts a shadow of 10m. Find the height of the tree that casts a shadow of 15m under similar conditions.

Q2 If the weight of 12 sheets of thick paper is 40g, how many sheets of the same paper would weigh 2.5kg?

Q3 6 pipes are required to fill a tank in 1hr20min. How long it will take if only 5 pipes are used?

Q4 If 15 workers can build a wall in 48 hrs, how many workers will be required to do the same work in 30 hrs?

Q5 A car takes 2hrs to reach a destination by travelling at a speed of 60km/h. How long will it take when the car travels at a speed of 80km/h?

### **INTRODUCTION TO GRAPH**

Q1 Plot the points (1, 1), (3, 3), (7,7). Join these points in pairs. Do they lie on a line passing through the origin?

Q2 Plot the points A(2,4) B(7,4) C(7,7) D(2,7). Join A to B, B to C., C to D, and D to A. What is quadrilateral ABCD?

Q3 The runs scored by a cricket team in 6 ODI's are given below

ODI No	1	2	3	4	5	6
Run scored	260	310	300	250	280	275

Draw a graph representing the above data.

### FACTORISATION

Q1 Factorize the following expressions.

1.  $X^2yz + xy^2z$
2.  $6xy - 4y + 6 - 9x$
3.  $Z - 7 + 7xy - xyz$
4.  $14pq + 35pqr$
5.  $4p^2 - 9q^2$
6.  $(l+m)^2 - (l-m)^2$
7.  $7p^2 + 21q^2$
8.  $3m^2 + 9m + 6$
9.  $Z^2 - 4z - 12$
10.  $P^4 - 81$

Q2 Divide as directed

1.  $5(2x+1)(3x+5)$  by  $(2x+1)$
2.  $44(x^4 - 5x^3 - 24x^2)$  by  $11x(x-8)$
3.  $X(x+1)(x+2)(x+3)$  by  $(x+1)x$
4.  $26xy(y-4)$  by  $y(y-4)$

### ALGEBRAIC EXPRESSIONS AND FACTORISATION

Q-1 Add: (i)  $xy - yz$ ,  $yz - zx$  and  $zx - xy$

(ii)  $3xy - 2yz + 3zx$  and  $3yz - 2xy + 2zx$

Q-2 Sub: (i)  $2x^2 - 3y^2 + 5x - 11$  from  $5x^2 + y^2 - 2y + 5$

(ii)  $3a^2b + 5ab - 7ab^2$  from  $2a^2 + 8ab + 7ab^2$

Q-3 Multiply (i)  $2x+3y$  by  $5x-2y$

(ii)  $x^2+y^2-5xy$  by  $3xy^3$

(iii)  $(7p-3q)(4p-5q)$

Q-4 Simplify (i)  $x(y-z) + y(z-x) + z(x-y)$

(ii)  $(x^2+x+1)(x^2-x+1)$  and find its value for  $x=1$

(iii)  $\frac{40x^4y^5 + 72x^5y^7}{8x^2y}$

(iv)  $\frac{7.63*7.63-2.37*2.37}{5.26}$

Q-5 Factorize (i)  $49(x-y)^2 - 25(x+y)^2$

(ii)  $x^2-y^2-x-y$