BOHRA PUBLIC SCHOOL

HOLIDAYS HOMEWORK (2022-2023)

CLASS-IX

1. Make a formulae book and write down the formulae of chapter-1 & chapter-2 in it.
2. Find the proof of two Identities:-
   (i) $(a+b)^2$
   (ii) $(a-b)^2$
   And write down the proof on A4 size sheet.
3. Make a chart for the Identities from the chapter-2 polynomial.
4. Using Spiral Method Construct $\sqrt{n}$ where n is the natural number, where $2 \leq n \leq 15$ on A4 size sheet.
5. Solve the assignment of chapter-1 & chapter-2. Attached with the holiday homework.

ASSIGNMENT -1

Class - IX Chapter:- Polynomials

1. **Factorize the following by splitting the middle term:**

a) $3x^2 + 19x + 30$

b) $2\sqrt{2}x^2 + 9x + 5\sqrt{2}$

c) $4x^2 - 13x + 10$

2. **Factorize the following by Factor theorem:**

a) $x^3 + 9x^2 + 23x + 15$

b) $x^3 + 6x^2 + 11x + 6$

3. **Factorize the following by using a suitable identity:**

a) $4x^2 + 12xy + 9y^2$

b) $2a^5 - 54a^2$

c) $2\sqrt{2}x^3 + 3\sqrt{3}y^3$

d) $x^5 - x$

e) $x^6 - y^6$

f) $(a-b)^3 + (b-c)^3 + (c-a)^3$

g) $x^8 - y^8$

h) $27x^3 - 135x^2 + 225x - 125$

4. If 5 is a zero of $x^3 + kx^2 + 2x + 8$, find k.

5. If $(x - 2)$ is a zero of $x^3 - 4x^2 + kx - 8$, find k.

6. Factorize the following by using a suitable identity:a)

$a^3 + b^3 - 8c^3 + 6abc$

$\left(a/b\right)^3 + \left(b/c\right)^3 + (c/a)^3 - 3$

$8x^3 - 27y^3 + 125z^3 + 90xyz$

7. Find the value of $a^3 + 8b^3$, if $a + 2b = 10$ and $ab = 15$.

8. Find the value of $a^3 + 27b^3$, if $a - 2b = (-6)$ and $ab = (-10)$.

9. Factorize $x^3 - 2x^2 - 5x + 6$.

10. If $x + y + z = 8$ and $xy + yz + zx = 20$, find the value of $x^3 + y^3 + z^3 - 3xyz$.

ASSIGNMENT -2

CHAPTER : NUMBER SYSTEM

1. Explain each of the following in p/q form:
2. (i) 0.675 (ii) $0.3\overline{2}$ (iii) $0.12\overline{3}$ (iv) $0.003\overline{52}$ (v) $4.\overline{32}$ (vi) 2.317317317.....
3. Find two irrational numbers and two rational numbers between 0.5 and 0.55
4. Simplify each of the following by rationalizing the denominator.
5. (i) $\frac{7+3\sqrt{5}}{7-3\sqrt{5}}$ (ii) $\frac{2\sqrt{3}-\sqrt{5}}{2\sqrt{2}+3\sqrt{3}}$ (iii) $\frac{7\sqrt{3}-5\sqrt{2}}{\sqrt{48}+\sqrt{18}}$
6. Simplify:- a) $3\sqrt{5}+-\sqrt{5}+\sqrt{180}$ (b) $\sqrt{54}+\sqrt{150}$
7. Give an example each of two irrational numbers, whose

(i) difference is a rational number
(ii) difference is an irrational number
(iii) sum is a rational number
(iv) sum is an irrational number
(v) product is a rational number
(vi) product is an irrational number
(vii) quotient is a rational number
(viii) quotient is an irrational number

ASSIGNMENT - 3

CHAPTER : LINEAR EQUATION IN TWO VARIABLE

1: Express the following linear equations in the form ax + by + c = 0 and indicate the values of a, b and c in each case:

(i) x – y/5 – 10 = 0 (ii) y – 2 = 0

2: Draw the graph of each of the following linear equations in two variables:

(i) y = 3x (ii) 3 = 2x + y

3: If the point (3, 4) lies on the graph of the equation 3y = ax + 7, find the value of a.

4: Show that the points A (1, 2), B (– 1, – 16) and C (0, – 7) lie on the graph of thelinear equation y = 9x – 7.

5: A fraction becomes 1/3 ,if 2 is added to both numerator and denominator. If 3 isadded to both numerator and denominator it becomes 2/5. Assuming the original fraction to be x/y,form a pair of linear equations in two variables for the problem.

6: Draw the graph of the linear equation y=mx+c for m=1/2 and c=3/2 .Read fromthe graph ,the value of x ,when y=4.5.

7: Draw the graph of the linear equation 3x + 4y = 6. At what points, the graph cuts xand y-axis?

8: If the work done by a body on application of a constant force is directly proportional to the distance travelled by the body, express this in the form of an equation in two variables and draw the graph of the same by taking the constant force as 5 units. Also read from the graph the work done when the distance travelled by the body is:2 units and 0 unit.

9: The taxi fare in a city is as follows: For the first kilometre, the fare is Rs 8 and for the subsequent distance it is Rs5 per km. Taking the distance covered as x km andtotal fare as Rsy, write a linear equation for this information, and draw its graph