

CLASS – 9th

1. Expand

$$1) \left(\frac{3}{2}x + 1\right)^3 \quad 2) \left(x - \frac{2}{3}y\right)^3$$

$$3) \left(\frac{1}{x} + \frac{y}{3}\right)^3 \quad 4) \left(\frac{1}{x} + y\right)^3 + \left(\frac{2}{x} + 2y\right)^3$$

Q.2 i) If $x+y=10$ and $xy=21$, find x^2+y^2
 ii) If $2x+y=12$ and $xy=10$, find $8x^3+y^3$

Q.3 If $2x+y=17$, $xy=35$, find $8x^2-y^3$ Q.4 If $x^2+1/x^2=51$ find x^3-1/x^3 Q.5 If $x^2+1/x^2=47$ find x^3+1/x^3 Q.6 If $x^4+1/x^4=47$ find x^3+1/x^3 , $x>0$

Q.7. Factorise each of following

$$1) 27p^3 - 1/216 - 9/2p^2 + 1/4p$$

$$2) 1 - 64a^3 - 12a + 48a^2$$

Q.8 Evaluate

$$1) (10.2)^3 \quad 2) (1.02)^3$$

Q.9. Expand each of following

$$1) \left(\frac{1}{4}a - \frac{1}{2}b + 1\right)^2$$

$$2) (-2x + 5y - 3z)^2$$

Q.10. factorise:

$$1) 2x^2 + y^2 + 8z^2 - 2\sqrt{2}xy + 4\sqrt{2}yz - 8xz$$

$$2) 16x^2 + 4y^2 + 9z^2 - 16xy - 12yz + 24zx$$

11. using suitable identity find

$$i) \frac{(0.137)^3 + (0.113)^3}{(0.137)^2 - 0.137 \times 0.113 + (0.113)^2}$$

$$ii) \frac{(0.237)^3 - (0.112)^3}{(0.237)^2 + 0.137 \times 0.113 + (0.112)^2}$$

12. If $a+b+c=0$ Prove that

$$\frac{a^2}{bc} + \frac{b^2}{ca} + \frac{c^2}{ab} = 3$$

13. If $a+b+c=5$ and $ab+bc+ca=10$
 Prove that $a^3+b^3+c^3-3abc = -25$

14. Verify that $x^3+y^3+z^3-3xyz$

$$= \frac{1}{2}(x+y+z)[(x-y)^2 + (y-z)^2 + (z-x)^2]$$

15. Find, with out actually calculation

$$i) (0.2)^3 - (0.3)^3 + (0.1)^3$$

$$ii) \left(\frac{1}{2}\right)^3 + \left(\frac{1}{3}\right)^3 - \left(\frac{5}{6}\right)^3$$

16. If $\frac{x}{y} + \frac{y}{x} = -1$ find the value of x^3-y^3 17. If $x^2 + \frac{1}{x^2} = \frac{50}{7}$, evaluate $x + \frac{1}{x}$

18. find remainder when $x^{51}+51$ is
 divided by $x+1$

Continuity is the key of success.Loyal