Downloaded from www.studiestoday.com

MATHEMATICS WORKSHEET <u>CLASS IX</u> <u>CHAPTER 2</u> POLYNOMIALS

VERY SHORT AND SHORT ANSWER TYPE QUESTIONS

- Q1. Write an example of an algebraic expression that is not a polynomial.
- Q2. $p(x) = \sqrt{x^3} + 1$ is not a polynomial. Give reason
- Q3. Find the value of polynomial $8x^3 6x^2 + 2$ at x = 1
- Q4. If $p(x) = 6x^3 + 5x^2 3x + 2$ find p(-1)
- Q5. Find the zero of the polynomial p(y) = 2y + 7
- Q6. Find the remainder when $x^{101} 1$ is divided by x -1
- Q7. Find whether $x^n + y^n$ is divisible by $x y(y \neq 0)$ or not.
- Q8. Write the following polynomials in standard form
 - i. $4y 4y^3 + 3 y^4$
 - ii. $5m^3 6m + 7 2m^2$
- Q9. Write the integral zeroes of the following polynomials
 - i. (x-3)(x-7)
 - ii. (x+1)(3x+2)
- Q10. If y=-1 is a zero of the polynomial q (y) = $4y^3 + ky^2 y 1$, then find the value of k
- Q11. For what value of m is $x^3 2mx^2 + 16$ divisible by x + 2
- Q12. Prove that $(a+b+c)^3 a^3 b^3 c^3 = 3(a+b)(b+c)(c+a)$

LONG AND VERY LONG ANSWER TYPE QUESTIONS

Q13. If x + 1/x = 5, find the value of $x^3 + 1/x^3$

- Q14. The polynomials $x^3 + 2x^2 5ax 7$ and $x^3 + ax^2 12x + 6$ when divided by x + 1 and x 2 respectively, leave remainders R_1 and R_2 respectively. Find the value of a in each of the following cases:
 - i. $R_1 = R_2$
 - ii. $R_1 + R_2 = 0$
 - iii. $2R_1 + R_2 = 0$
- Q15. Factorise $p(x) = x^4 + x^3 7x^2 x + 6$ by factor theorem
- Q16. Prove that $2x^4 6x^3 + 3x^2 + 3x 2$ is exactly divisible by $x^2 3x + 2$
 - i. By actual division
 - ii. Without actual division
- Q17. When a polynomial $p(x) = x^4 2x^3 + 3x^2 ax + b$ is divisible by x 1 and x + 1, the remainders are 5 and 19 respectively. Find the remainder when p(x) is divided by x 2.
- Q18. If a + b + c = 9 and ab + bc + ca = 26, find $a^2 + b^2 + c^2$
- Q19. Simplify:

$$\frac{(4x^2 - 9y^2)^3 + (9y^2 - 16y^2)^3 + (16z^2 - 4x^2)^3}{(2x - 3y)^3 + (3y - 4z)^3 + (4z - 2x)^3}$$

Downloaded from www.studiestoday.com

Downloaded from www.studiestoday.com

Q20. If a + b + c = 0, prove that :

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

Q21. If x – 3 and x – 1/3 are both factors of $ax^2 + 5x + b$, show that a = b Q22. Find the zeroes of $(x - 2)^2 - (x+2)^2$ Q23. Factorize:

i.
$$3(x+2)^2 - 5(x+2) + 2$$

ii. $x^3 - 2x^2 - 5x + 6$
iii. $8p^3 + \frac{12}{5}p^2 + \frac{6}{25}p + \frac{1}{125}$
iv. $x^6 + y^6$
v. $3\sqrt{3}x^3 - 5\sqrt{5}y^3$

ANSWERS:

3. 4 4.4 5. y=-7/2 6. 0 7. no(show why) 10.4 11.m=3 13.110 14. i). a=44 ii). a=-32/9 iii).a=-13/7 17.a=5, b=8 18.29 19. (2x + 3y)(3y + 4z)(4z + 2x) 22.0

Downloaded from www.studiestoday.com