EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Polynomials and Factorisation

Grade : SSC Grade IX

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1. Factorize $(16x^2-64)$

   (i) $(4x+8)(4x-8)$ (ii) $(4x+4)(4x-16)$ (iii) $(4x-4)(4x+16)$ (iv) $(4x-8)(4x-8)$ (v) $(4x+8)(4x+8)$

2. Factorize $(18x^2+57xy+9y^2)$

   (i) $(3x-9y)(6x+y)$ (ii) $(3x+9y)(6x+y)$ (iii) $(3x+9y)(3x-9y)$ (iv) $(3x-9y)(6x-y)$

   (v) $(3x+9y)(6x-y)$

3. The value of the polynomial $(7p^2q+4p^2r+5pr^2)$ at $p=(-3), q=1, r=1$ is

   (i) 83 (ii) 81 (iii) 87 (iv) 84 (v) 85

4. Which of the following terms can be added to $(-4p^2)$?

   (i) $(-7p^4)$ (ii) (-2) (iii) $(-9p^2)$ (iv) $(-3p)$ (v) $4p^3$

5. Which of the following are true ?

   a) Division of a polynomial with another polynomial stops when the degree of the remainder equals the degree of the divisor
   b) If the degree of p(x) is less then the degree of d(x), we should not divide p(x) with d(x)
   c) If p(x) is divided by (x - a), the remainder is p(a)
   d) If p(a) = 0, then (x + a) perfectly divides p(x)

   (i) {a,d,b} (ii) {b,c} (iii) {a,b} (iv) {a,c,b} (v) {d,c}

6. The quotient of $(25a^2-25b^2) \div (-5a+5b)$ is

   (i) $(-6a-5b)$ (ii) $(-5a-2b)$ (iii) $(-5a-8b)$ (iv) $(-4a-5b)$ (v) $(-5a-5b)$

7. Expand $\left(x-\frac{1}{x}\right)\left(x+\frac{1}{x}\right)\left(x^2+\frac{1}{x^2}\right)$

   (i) $x^4-\frac{1}{x^4}$ (ii) $-x-\frac{2}{x^3}-\frac{1}{x^7}$ (iii) $3x^5+6x+3x^3+\frac{6}{x}+\frac{3}{x^3}+\frac{3}{x^5}$ (iv) $x^5+x^3+x+\frac{1}{x}$

8. Which of the following is a like term of $(-3j^2)$?

   (i) $(-4i^2k)$ (ii) $(-6ik^2)$ (iii) $7i^2j^2k$ (iv) $(-5j^2)$ (v) $5ik$

9. $(-\frac{2}{3}a+2b)^2$

(i) $(\frac{4}{9}a^2-2ab+4b^2)$ (ii) $(\frac{4}{9}a^2-\frac{10}{3}ab+4b^2)$ (iii) $(\frac{4}{7}a^2-\frac{8}{3}ab+4b^2)$ (iv) $(\frac{4}{11}a^2-\frac{8}{3}ab+4b^2)$

(v) $(\frac{4}{9}a^2-\frac{8}{3}ab+4b^2)$

10. Factorize $(5x+4y)^2 - 2(5x+4y)(2x+6y) + (2x+6y)^2$

(i) $(7x+10y)^2$ (ii) $(5x+4y)(2x+6y)$ (iii) $(4x-2y)^2$ (iv) $(3x-2y)^2$ (v) $(-2x+2y)^2$

11. Which of the following terms is a like term of 4 ?

(i) $(-8e)$ (ii) $(-4e^3)$ (iii) $9e^2$ (iv) e^4 (v) (-6)

12. $(3a+3b)(9a^2-9ab+9b^2)$

(i) $(27a^3+24b^3)$ (ii) $(27a^3+27b^3)$ (iii) $(28a^3+27b^3)$ (iv) $(27a^3+29b^3)$ (v) $(26a^3+27b^3)$

13. The value of the polynomial $(-3bc)$ at $a=5, b=2, c=4$ is

(i) -23 (ii) -26 (iii) -24 (iv) -25 (v) -21

14. The expanded form of $(\frac{4}{5}hi)^3$ is

(i) $\frac{4}{5}hi\times\frac{4}{5}hi\times\frac{4}{5}hi\times\frac{4}{5}hi$ (ii) $\frac{4}{5}hi\times\frac{4}{5}hi$ (iii) $\frac{4}{5}hi$ (iv) $\frac{4}{5}hi\times\frac{4}{5}hi\times\frac{4}{5}hi$ (v) $\frac{4}{5}hi\times\frac{4}{5}hi\times\frac{4}{5}hi\times\frac{4}{5}hi\times\frac{4}{5}hi$

15. If the polynomial $ax^2 + bx + 6$ is divided by $(3x+3)$, it leaves a remainder 15. If it is divided by $(2x+4)$, it leaves a remainder 28. Find the value of a and b

(i) 3 , -7 (ii) 2 , -7 (iii) 2 , -6 (iv) -8 , 1 (v) -6 , 3

16. The value of the polynomial $(-6ij+9i-9k)$ at $i=1, j=(-3), k=(-2)$ is

(i) 45 (ii) 44 (iii) 46 (iv) 43 (v) 48

17. Factorize $(8a^3-36abc+27b^3+8c^3)$

(i) $(2a+3b+2c)(4a^2-6ab-4ac+9b^2-6bc+4c^2)$ (ii) $(2a+6b+2c)(4a^2-4ab-4ac+9b^2-6bc+4c^2)$

(iii) $(a+3b+2c)(3a^2-6ab-4ac+9b^2-6bc+4c^2)$ (iv) $(3a+3b+2c)(5a^2-6ab-4ac+9b^2-6bc+4c^2)$

(v) $(2a+2c)(4a^2-9ab-4ac+9b^2-6bc+4c^2)$

18. The degree of polynomial $(-7m^2n^2o+7mn-6n^2o^2+3no-o^2)$ is

(i) 4 (ii) 2 (iii) 6 (iv) 5 (v) 8

19. If $(a+b)=9$, $ab=18$, find (a^4+b^4)

(i) 1377 (ii) 1376 (iii) 1374 (iv) 1380 (v) 1378

20. Which of the following are polynomials?

a) x^2

b) $x^2 + \frac{1}{x^2}$

c) $(x+y)$

d) $\frac{(x+y)}{(x-y)}$

e) $x + \frac{1}{x}$

(i) {b,a} (ii) {d,c} (iii) {d,c,a} (iv) {a,c} (v) {e,b,a}

21. If the polynomials $5x^2 + ax - 20$ and $ax^2 - 5x + 14$ leave the same remainder when divided by $(x+2)$, find the value of a

(i) (-4) (ii) (-2) (iii) (-6) (iv) (-5) (v) (-3)

22. Factorize $(9a-8b)^3 - (6a-2b)^3 - (3a-6b)^3$

(i) $3(6a-2b)(3a+6b)(9a-8b)$ (ii) $3(6a-2b)(3a-6b)(9a-8b)$ (iii) $3(6a+2b)(3a+6b)(3a+4b)$

(iv) $3(6a+2b)(3a+6b)(9a-8b)$ (v) $3(6a+2b)(3a-6b)(9a-8b)$

23. The value of 792×797 is

(i) 631225 (ii) 631227 (iii) 631223 (iv) 631222 (v) 631224

24. The remainder when $(2e^4+2e^2+9e-6)$ is divided by $(e+2)$ is

(i) 16 (ii) 15 (iii) 17 (iv) 13 (v) 19

25. Which of the following algebraic expressions is a quadratic polynomial?

(i) $(-5q+5)$ (ii) $(8q^3-4q^2+5q+5)$ (iii) $(6q^4-6q^3-8q^2+2q-6)$ (iv) $(2q^2-2q+4)$ (v) 6

Assignment Key

1) (i)	2) (ii)	3) (iv)	4) (iii)	5) (ii)	6) (v)
7) (i)	8) (iv)	9) (v)	10) (iv)	11) (v)	12) (ii)
13) (iii)	14) (iv)	15) (ii)	16) (i)	17) (i)	18) (iv)
19) (i)	20) (iv)	21) (i)	22) (ii)	23) (v)	24) (i)
25) (iv)					