EduSahara™ Assignment

Name : Factorisation by Grouping

Chapter : Factorisation

Grade : ICSE Grade IX

1. Factorize $(4x^2+2x-6)$

   (i) $(2x-2)(2x+3)$ (ii) $(2x-2)(x+3)$ (iii) $(2x-2)(3x+3)$ (iv) $(2x-2)(5x+3)$ (v) $(2x-2)3$

2. Factorize $(x^3-x^2-34x-56)$

   (i) $(x+2)(-2x-7)(-x+4)$ (ii) $(x+2)(x-7)(x+4)$ (iii) $(x+2)(3x-7)(3x+4)$ (iv) $(x+2)(-7)4$

   (v) $(x+2)(2x-7)(2x+4)$

3. Factorize $(x^4+16x^3+81x^2+146x+80)$

   (i) $(x+8)(3x+5)(4x+2)(3x+1)$ (ii) $(x+8)(2x+5)(2x+2)(2x+1)$ (iii) $(x+8)(-x+5)(-2x+2)(-2x+1)$

   (iv) $(x+8)521$ (v) $(x+8)(x+5)(x+2)(x+1)$

4. Factorize $(x^2+2xa+a^2-49)$

   (i) $(x-a-7)(x+a-7)$ (ii) $(x+a-7)(x-a+7)$ (iii) $(x+a+7)(x+a-7)$ (iv) $(x-a+7)(x+a+7)$

   (v) $(x+a+7)(x-a-7)$

5. Factorize $(x^3+3x^2a+3xa^2-x+a^3-a)$

   (i) $(x-a)(x-a-1)(x+a+1)$ (ii) $(x+a)(x-a-1)(x+a+1)$ (iii) $(x-a)(x+a-1)(x-a+1)$

   (iv) $(x+a)(x+a-1)(x-a+1)$ (v) $(x+a)(x+a-1)(x+a+1)$

6. Factorize $(16x^2-10xy-21y^2)$

   (i) $(8x+7y)(8x-7y)$ (ii) $(8x-7y)(2x+3y)$ (iii) $(8x+7y)(2x-3y)$ (iv) $(8x-7y)(2x-3y)$

   (v) $(8x+7y)(2x+3y)$

7. Factorize $(-60x^3-146x^2y-96xy^2-18y^3)$

   (i) $(-3x-y)(-4x-6y)(-5x-3y)$ (ii) $(-3x-y)(-4x-6y)(-5x+3y)$ (iii) $(-3x+y)(-4x-6y)(-5x-3y)$

   (iv) $(-3x-y)(-4x+6y)(-5x+3y)$ (v) $(-3x+y)(-4x-6y)(-5x+3y)$

8. Which of the following is a factor of $2x^2y^4z^3$?

   (i) $2x^2y^5z^3$ (ii) $x^3y^3z^3$ (iii) $2x^2y^3z^3$ (iv) $2x^2y^3z^4$

9. Which of the following is not a factor of $21x^2y^4z^5$?

   (i) xy^4z^5 (ii) y^4z^4 (iii) $x^2y^5z^5$ (iv) $x^2y^3z^5$ (v) $x^2y^4z^4$

10. Which of the following is a factor of $(5x+yz)$?

    (i) $5y$ (ii) yz (iii) $5x$ (iv) $5xz$ (v) no factors

11. Which of the following is an irreducible factor of $9xyz^3$?

(i) xz^3 (ii) z (iii) x^2yz^3 (iv) x^2y (v) yz

12. Which of the following is not an irreducible factor of (x^2y+xy^2+xy) ?

(i) y (ii) x (iii) xy (iv) $(x+y+1)$

13. Factorize $(x^2+11x+30)$

(i) $(x-5)(x-6)$ (ii) $(x+5)(x+6)$ (iii) $(x+5)(x-6)$ (iv) $(x-5)(x+6)$

14. In which of the cases, $g(x)$ is a factor of $f(x)$?

(i) $f(x)=(-x^3+11x^2-36x+36), g(x)=(-x+3)$ (ii) $f(x)=(6x^3-31x^2-14x+144), g(x)=(-x+6)$

(iii) $f(x)=(-2x^3+19x^2-57x+54), g(x)=(x+2)$ (iv) $f(x)=(2x^3-9x^2-8x+36), g(x)=(-3x+8)$

(v) $f(x)=(2x^3-17x^2+12x+108), g(x)=(-x+2)$

15. Factorize (p^4-8p^2+16)

(i) $(p^2+4p+4)(p^2-4p-4)$ (ii) $(p^2+4p+4)(p^2-4p+4)$ (iii) $(p^2+4p+4)(p^2+4p-4)$

(iv) $(p^2+4p-4)(p^2-4p-4)$ (v) $(p^2+4p-4)(p^2-4p+4)$

16. Factorize (d^4-8d^2-128)

(i) $(d^2+8)(d^2-8)$ (ii) $(d-4)(d-4)(d+4)$ (iii) $(d-4)(d+4)(d+4)$ (iv) $(d-4)(d+4)(d^2+8)$

(v) $(d-4)(d+4)(d^2-8)$

17. Factorize $a^2-b^2-c^2-2bc$

(i) $(a-b-c)(a+b+c)$ (ii) $(a-b-c)(a+b-c)$ (iii) $(a+b+c)(a-b+c)$ (iv) $(a-b-c)(a-b+c)$

(v) $(a+b+c)(a+b-c)$

18. Factorize (x^4+64)

(i) $(x^2+4x+8)(x^2+4x-8)$ (ii) $(x^2-4x+8)(x^2+4x+8)$ (iii) $(x^2-4x+8)(x^2+4x-8)$

(iv) $(x^2-4x+8)(x^2-4x-8)$ (v) $(x^2+4x+8)(x^2-4x-8)$

19. Factorize $(7x^4+448)$

(i) $7(x^2-4x+8)(x^2+4x+8)$ (ii) $7(x^2-4x+8)(x^2-4x-8)$ (iii) $7(x^2+4x+8)(x^2-4x-8)$

(iv) $7(x^2-4x+8)(x^2+4x-8)$ (v) $7(x^2+4x+8)(x^2+4x-8)$

20. Factorize (x^4+x^2+1)

(i) $(x^2+x+1)(x^2+x-1)$ (ii) $(x^2-x+1)(x^2-x-1)$ (iii) $(x^2-x+1)(x^2+x-1)$ (iv) $(x^2+x+1)(x^2-x-1)$

(v) $(x^2-x+1)(x^2+x+1)$

21. Factorize $(x^4+x^2y^2+y^4)$

(i) $(x^2+xy+y^2)(x^2+xy-y^2)$ (ii) $(x^2-xy+y^2)(x^2+xy-y^2)$ (iii) $(x^2-xy+y^2)(x^2-xy-y^2)$

(iv) $(x^2+xy+y^2)(x^2-xy-y^2)$ (v) $(x^2-xy+y^2)(x^2+xy+y^2)$

22. Factorize $(x^3-6x^2+12x-16)$

(i) $(x-4)(x^2-2x+4)$ (ii) $(x+4)(x^2-2x+4)$ (iii) $(x-4)(x-4)(x+4)$ (iv) $(x-4)(x^2+2x+4)$

(v) $(x+4)(x^2+2x+4)$

23. Factorize $(x^3+6x^2+12x+9)$

(i) $(x+3)(x^2+3x+3)$ (ii) $(x-3)(x^2+3x+3)$ (iii) $(x+3)(x^2-3x+3)$ (iv) $(x-3)(x^2-3x+3)$

(v) $(x+3)(x+3)(x-3)$

24. Factorize $(x^4+x^3-7x^2-x+6)$

(i) $(x-1)(x+1)(x-2)(x+2)$ (ii) $(x-1)(x+1)(x+2)(x-3)$ (iii) $(x-1)(x+1)(x+3)(x+2)$

(iv) $(x-1)(x+1)(x+3)(x-2)$ (v) $(x-1)(x+1)(x+3)(x-3)$

25. Factorize $(10x^2+2xy-12y^2)$

(i) $(5x-6y)(2x-2y)$ (ii) $(5x+6y)(2x+2y)$ (iii) $(5x-6y)(2x+2y)$ (iv) $(5x+6y)(5x+6y)$

(v) $(5x+6y)(2x-2y)$

26. Factorize (x^6+26x^3-27)

(i) $(x-3)(x^2-3x+9)(x-1)(x^2+x+1)$ (ii) $(x+3)(x^2-3x+9)(x-1)(x^2+x+1)$

(iii) $(x+3)(x^2-3x+9)(x+1)(x^2+x+1)$ (iv) $(x+3)(x^2+x+1)(x-1)(x^2+x+1)$

(v) $(x-3)(x^2-3x+9)(x+1)(x^2+x+1)$

27. Factorize $(54xy+63y^2)$

(i) $9x(6x+7y)$ (ii) $9y(6x+7y)$ (iii) $9y(6x-7y)$ (iv) $9y(-6x-7y)$ (v) $9x(6x-7y)$

28. Factorize $(35a^2b+20ab^2)$

(i) $5b(7a-4b)$ (ii) $5ab(7a+4b)$ (iii) $5ab(7a-4b)$ (iv) $5a(7a+4b)$ (v) $5ab(-7a-4b)$

29. Factorize (x^4+2x^2-3)

(i) $(x^2-1)(x^2-3)$ (ii) $(x^2+1)(x^2+3)$ (iii) $(x^2+3)(x^2-3)$ (iv) $(x^2+1)(x^2-3)$ (v) $(x^2-1)(x^2+3)$

Assignment Key

1) (i)	2) (ii)	3) (v)	4) (iii)	5) (v)	6) (iii)
7) (i)	8) (iii)	9) (iii)	10) (v)	11) (ii)	12) (iii)
13) (ii)	14) (i)	15) (ii)	16) (iv)	17) (i)	18) (ii)
19) (i)	20) (v)	21) (v)	22) (i)	23) (i)	24) (iv)
25) (v)	26) (ii)	27) (ii)	28) (ii)	29) (v)	