EduSahara™ Assignment

Name : Factorisation by Grouping

Chapter : Factorisation

Grade : ICSE Grade IX

1. Factorize $(4x^2+10x+4)$

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

2. Factorize $(4x^3-8x^2-37x+20)$

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

   (v) $(2x-1)(x+5)(-4)$

3. Factorize $(x^4+7x^3-34x^2-112x+288)$

   (i) $(x-2)(-2x-4)(-x+4)(-2x+9)$ (ii) $(x-2)(x-4)(x+4)(x+9)$ (iii) $(x-2)(2x-4)(2x+4)(2x+9)$

   (iv) $(x-2)(4x-4)(4x+4)(4x+9)$ (v) $(x-2)(-4)49$

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

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

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

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 $(12x^2+26xy-16y^2)$

   (i) $(3x-8y)(4x+2y)$ (ii) $(3x+8y)(3x-8y)$ (iii) $(3x-8y)(4x-2y)$ (iv) $(3x+8y)(4x-2y)$

   (v) $(3x+8y)(4x+2y)$

7. Factorize $(20x^3-70x^2y-70xy^2+120y^3)$

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

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

8. Which of the following is a factor of $35x^2y^5z^4$?

   (i) $7xy^3z^5$ (ii) $7xy^3z^4$ (iii) $x^3y^3z^4$ (iv) $7x^2y^3z^5$ (v) $7xy^6z^4$

9. Which of the following is not a factor of $3x^3y^5z^5$?

   (i) $x^3y^4z^5$ (ii) $x^2y^5z^5$ (iii) $x^3y^5z^4$ (iv) xy^4z^3 (v) $x^4y^6z^6$

10. Which of the following is a factor of $(7x^5+y^3z^3)$?

(i) $7y^3$ (ii) $7x^5$ (iii) y^3z^3 (iv) no factors (v) $7x^2z$

11. Which of the following is an irreducible factor of $32x^5y^3z^2$?

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

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

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

13. Factorize $(x^2+8x+15)$

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

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

(i) $f(x)=(x^3-7x^2-14x+120), g(x)=(-x+6)$ (ii) $f(x)=(-x^3-4x^2+36x+144), g(x)=(-2x+3)$

(iii) $f(x)=(-2x^3-17x^2-18x+72), g(x)=(-x+7)$ (iv) $f(x)=(2x^3-x^2-63x+90), g(x)=(x+4)$

(v) $f(x)=(2x^3-5x^2-81x+126), g(x)=(-x+5)$

15. Factorize (a^4-80a^2+100)

(i) $(a^2+10a+10)(a^2-10a-10)$ (ii) $(a^2+10a-10)(a^2-10a+10)$ (iii) $(a^2+10a-10)(a^2-10a-10)$

(iv) $(a^2+10a+10)(a^2-10a+10)$ (v) $(a^2+10a+10)(a^2+10a-10)$

16. Factorize (t^4-24t^2-432)

(i) $(t-6)(t+6)(t+6)$ (ii) $(t-6)(t-6)(t+6)$ (iii) $(t^2+12)(t^2-12)$ (iv) $(t-6)(t+6)(t^2-12)$

(v) $(t-6)(t+6)(t^2+12)$

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 $(x^4+26244)$

(i) $(x^2-18x+162)(x^2-18x-162)$ (ii) $(x^2-18x+162)(x^2+18x+162)$

(iii) $(x^2+18x+162)(x^2+18x-162)$ (iv) $(x^2+18x+162)(x^2-18x-162)$

(v) $(x^2-18x+162)(x^2+18x-162)$

19. Factorize $(8x^4+41472)$

(i) $8(x^2+12x+72)(x^2-12x-72)$ (ii) $8(x^2-12x+72)(x^2-12x-72)$ (iii) $8(x^2+12x+72)(x^2+12x-72)$

(iv) $8(x^2-12x+72)(x^2+12x+72)$ (v) $8(x^2-12x+72)(x^2+12x-72)$

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 $(x^3-9x^2+27x-152)$

(i) $(x+8)(x^2+x+19)$ (ii) $(x-8)(x^2-x+19)$ (iii) $(x-8)(x^2+x+19)$ (iv) $(x+8)(x^2-x+19)$

(v) $(x-8)(x-8)(x+8)$

23. Factorize $(x^3+3x^2+3x+65)$

(i) $(x-5)(x^2+2x+13)$ (ii) $(x+5)(x^2-2x+13)$ (iii) $(x+5)(x+5)(x-5)$ (iv) $(x-5)(x^2-2x+13)$

(v) $(x+5)(x^2+2x+13)$

24. Factorize (x^4-10x^2+9)

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

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

25. Factorize $(6x^2+9xy-15y^2)$

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

(v) $(2x+5y)(3x-3y)$

26. Factorize (x^6-7x^3-8)

(i) $(x+2)(x^2+2x+4)(x-1)(x^2-x+1)$ (ii) $(x-2)(x^2+2x+4)(x+1)(x^2-x+1)$

(iii) $(x-2)(x^2+2x+4)(x-1)(x^2-x+1)$ (iv) $(x-2)(x^2-x+1)(x+1)(x^2-x+1)$

(v) $(x+2)(x^2+2x+4)(x+1)(x^2-x+1)$

27. Factorize $(40xy+45y^2)$

(i) $5y(-8x-9y)$ (ii) $5x(8x+9y)$ (iii) $5x(8x-9y)$ (iv) $5y(8x+9y)$ (v) $5y(8x-9y)$

28. Factorize $(42a^2b+24ab^2)$

(i) $6ab(7a-4b)$ (ii) $6b(7a-4b)$ (iii) $6a(7a+4b)$ (iv) $6ab(7a+4b)$ (v) $6ab(-7a-4b)$

29. Factorize (x^4+5x^2+6)

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

Assignment Key

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