EduSahara™ Assignment

Name : Factorisation Using Identities

Chapter : Factorisation

Grade : ICSE Grade IX

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1. Factorize $(9a^2+24ab+16b^2)$

   (i) $(-2a-4b)(-2a-4b)$ (ii) $(-4a-4b)(-4a-4b)$ (iii) $(-3a-2b)(-3a-b)$ (iv) $(-3a-4b)(-3a-4b)$

   (v) $(-3a-6b)(-3a-6b)$

2. Factorize $(9a^2+24ab+16b^2)$

   (i) $(3a+6b)(3a+7b)$ (ii) $(4a+4b)(4a+4b)$ (iii) $(3a+4b)(3a+4b)$ (iv) $(3a+b)(3a+b)$

   (v) $(2a+4b)(2a+4b)$

3. Factorize (a^2-16b^2)

   (i) $(-a+7b)(-a-b)$ (ii) $(-a+2b)(-a-6b)$ (iii) $4b(-4b)$ (iv) $(-2a+4b)(-2a-4b)$

   (v) $(-a+4b)(-a-4b)$

4. Factorize $(27a^3-135a^2b+225ab^2-125b^3)$

   (i) $(3a-5b)(3a-5b)(3a-5b)$ (ii) $(3a-3b)(3a-3b)(3a-2b)$ (iii) $(3a-8b)(3a-7b)(3a-8b)$

   (iv) $(4a-5b)(4a-5b)(4a-5b)$ (v) $(2a-5b)(2a-5b)(2a-5b)$

5. Factorize $(-8a^3+24a^2b-24ab^2+8b^3)$

   (i) $(-a+2b)(-a+2b)(-a+2b)$ (ii) $(-2a)(-2a-b)(-2a)$ (iii) $(-3a+2b)(-3a+2b)(-3a+2b)$

   (iv) $(-2a+2b)(-2a+2b)(-2a+2b)$ (v) $(-2a+4b)(-2a+4b)(-2a+4b)$

6. Factorize $(4a^2+20ab+20ac+25b^2+50bc+25c^2)$

   (i) $(2a+2b+5c)(2a+3b+5c)$ (ii) $(a+5b+5c)(a+5b+5c)$ (iii) $(2a+7b+5c)(2a+7b+5c)$

   (iv) $(3a+5b+5c)(3a+5b+5c)$ (v) $(2a+5b+5c)(2a+5b+5c)$

7. Factorize $(-64a^3+64b^3)$

   (i) $(-5a+4b)(15a^2+16ab+16b^2)$ (ii) $(-4a+2b)(16a^2+13ab+16b^2)$

   (iii) $(-3a+4b)(17a^2+16ab+16b^2)$ (iv) $(-4a+4b)(16a^2+16ab+16b^2)$

   (v) $(-4a+6b)(16a^2+18ab+16b^2)$

8. Factorize $(-64a^3+64b^3)$

   (i) $(-4a+b)(16a^2+14ab+16b^2)$ (ii) $(-5a+4b)(15a^2+16ab+16b^2)$

   (iii) $(-4a+7b)(16a^2+18ab+16b^2)$ (iv) $(-4a+4b)(16a^2+16ab+16b^2)$

   (v) $(-3a+4b)(17a^2+16ab+16b^2)$

9. Factorize $(64a^3+240abc+64b^3-125c^3)$

(i) $(4a+4b-5c)(16a^2-16ab+20ac+16b^2+20bc+25c^2)$

(ii) $(4a+6b-5c)(16a^2-14ab+20ac+16b^2+20bc+25c^2)$

(iii) $(4a+2b-5c)(16a^2-18ab+20ac+16b^2+20bc+25c^2)$

(iv) $(5a+4b-5c)(17a^2-16ab+20ac+16b^2+20bc+25c^2)$

(v) $(3a+4b-5c)(15a^2-16ab+20ac+16b^2+20bc+25c^2)$

10. Evaluate : 975^2-25^2

(i) 9500000 (ii) 950025 (iii) 950000 (iv) 950975 (v) 95000

11. Factorize $(4x+5y)^2+2(4x+5y)(9x+3y)+(9x+3y)^2$

(i) $(13x+8y)^2$ (ii) $(5x-y)^2$ (iii) $(4x+5y)(9x+3y)$ (iv) $(-5x+2y)^2$ (v) $(14x+8y)^2$

12. Factorize $(5x+3y)^2-2(5x+3y)(4x+8y)+(4x+8y)^2$

(i) $(5x+3y)(4x+8y)$ (ii) $(2x-5y)^2$ (iii) $5y^2$ (iv) $(9x+11y)^2$ (v) $(x-5y)^2$

13. Factorize $a^2b^2-b^2c^2$

(i) $(ab+bc)(ab-bc)$ (ii) $(ac+bc)(ac-bc)$ (iii) $(ab+bc)(ab+bc)$ (iv) $(ab+bc)(ac+bc)$
(v) $(ab-bc)(ab-bc)$

14. Factorize $9a^3-4a$

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

(v) $(3a^2+2)(2a-3)a$

15. Factorize (x^2-81)

(i) $(x-9)(x-9)$ (ii) $(x+3)(x-27)$ (iii) $(x+9)(x-9)$ (iv) $(x-3)(x+27)$ (v) $(x+9)(x+9)$

16. Factorize $(100x^2-100)$

(i) $(10x+10)(10x-10)$ (ii) $(10x-10)(10x-10)$ (iii) $(10x-4)(10x+25)$ (iv) $(10x+10)(10x+10)$
(v) $(10x+4)(10x-25)$

17. Factorize $(64x^2-100y^2)$

(i) $(8x-50y)(8x+2y)$ (ii) $(8x+50y)(8x-2y)$ (iii) $(8x+10y)(8x-10y)$ (iv) $(8x-10y)(8x-10y)$
(v) $(8x+10y)(8x+10y)$

18. Find 603^3

(i) 219256247 (ii) 219256217 (iii) 219256237 (iv) 219256227 (v) 219256207

19. Find 394^3

(i) 61162994 (ii) 61163004 (iii) 61162984 (iv) 61162964 (v) 61162974

20. Find the value of $45^3 + 35^3 - 80^3$

(i) 729000 (ii) (-378000) (iii) (-729000) (iv) (-343000) (v) 343000

21. Find the value of $7.6^3 + 3.2^3 - 10.8^3$

(i) 3511.808 (ii) 262.144 (iii) -787.968 (iv) -3511.808 (v) -262.144

22. Factorize $(p^4 - 4096)$

(i) $(p+8)(p-8)(p^2+64)$ (ii) $(p+8)(p-8)(p-8)$ (iii) $(p+8)(p-8)(p^2-16)$ (iv) $(p^2+64)(p^2-16)$

(v) $(p+8)(p+8)(p-8)$

23. Factorize $(a+b)^2 - c^2$

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

24. Factorize $a^2c^2 - b^2c^2 - a^2d^2 + b^2d^2$

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

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

25. Factorize $(a^6 - b^6)$

(i) $(a-b)(a^2+ab+b^2)(a+b)(a^2-ab-b^2)$ (ii) $(a-b)(a^2+ab+b^2)(a+b)(a^2+ab-b^2)$

(iii) $(a-b)(a^2-ab+b^2)(a+b)(a^2-ab-b^2)$ (iv) $(a-b)(a^2+ab+b^2)(a+b)(a^2-ab+b^2)$

(v) $(a-b)(a^2+ab-b^2)(a+b)(a^2-ab+b^2)$

26. Factorize $(a-b)^3 + (b-c)^3 + (c-a)^3$

(i) $3(a-b)(b+c)(c-a)$ (ii) $3(a-b)(b-c)(c-a)$ (iii) $3(a-b)(b-c)(c+a)$ (iv) $3(a+b)(b-c)(c-a)$

(v) $3(a-b)(b+c)(c+a)$

27. Factorize $(5a-4b)^3 + (4b-4c)^3 + (4c-5a)^3$

(i) $3(5a-4b)(4b+4c)(4c+5a)$ (ii) $3(5a+4b)(4b-4c)(4c-5a)$ (iii) $3(5a-4b)(4b+4c)(4c-5a)$

(iv) $3(5a-4b)(4b-4c)(4c-5a)$ (v) $3(5a-4b)(4b-4c)(4c+5a)$

28. Factorize $(7a-7b)^3 - (5a-4b)^3 - (2a-3b)^3$

(i) $3(5a+4b)(2a-3b)(7a-7b)$ (ii) $3(5a+4b)(2a+3b)(7a-7b)$ (iii) $3(5a-4b)(2a-3b)(7a-7b)$

(iv) $3(5a-4b)(2a+3b)(7a-7b)$ (v) $3(5a+4b)(2a+3b)(3a-b)$

29. Factorize $(12x^2+7xy-10y^2)$

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

(v) $(4x-5y)(3x-2y)$

Assignment Key

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

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