

EduSahara™ Learning Center Assignment**Grade : Class VIII, ICSE****Chapter : Factorization****Name : Factorisation Using Identities****Licensed To : Teachers and Students for non-commercial use**

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

(i) $(-a - 3b)(-a - 3b)$

(ii) $(-b)(-b)$

(iii) $(-2a - b)(-2a - b)$

(iv) $(-a - b)(-a - b)$

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

2. Factorize ($9a^2 + 6ab + b^2$)

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

(ii) $(-4a - b)(-4a - b)$

(iii) $(-3a - 4b)(-3a - 3b)$

(iv) $(-2a - b)(-2a - b)$

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

3. Factorize ($4a^2 - 16b^2$)

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

(ii) $(-2a + 6b)(-2a - 2b)$

(iii) $(-2a + 4b)(-2a - 4b)$

(iv) $(-3a + 4b)(-3a - 4b)$

(v) $(-2a + b)(-2a - 6b)$

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

$$(i) \quad (-2a + 2b)(-2a + 2b)(-2a + 2b)$$

$$(ii) \quad (-3a + 2b)(-3a + 2b)(-3a + 2b)$$

$$(iii) \quad (-a + 2b)(-a + 2b)(-a + 2b)$$

$$(iv) \quad (-2a + 5b)(-2a + 5b)(-2a + 4b)$$

$$(v) \quad (-2a - b)(-2a - b)(-2a - b)$$

5. Factorize $(-27a^3 - 54a^2b - 36ab^2 - 8b^3)$

$$(i) \quad (-4a - 2b)(-4a - 2b)(-4a - 2b)$$

$$(ii) \quad (-3a)(-3a)(-3a + b)$$

$$(iii) \quad (-3a - 5b)(-3a - 4b)(-3a - 5b)$$

$$(iv) \quad (-3a - 2b)(-3a - 2b)(-3a - 2b)$$

$$(v) \quad (-2a - 2b)(-2a - 2b)(-2a - 2b)$$

6. Factorize $(9a^2 + 12ab + 24ac + 4b^2 + 16bc + 16c^2)$

$$(i) \quad (4a + 2b + 4c)(4a + 2b + 4c)$$

$$(ii) \quad (3a + 2b + 4c)(3a + 2b + 4c)$$

$$(iii) \quad (3a - b + 4c)(3a + 4c)$$

$$(iv) \quad (2a + 2b + 4c)(2a + 2b + 4c)$$

$$(v) \quad (3a + 5b + 4c)(3a + 4b + 4c)$$

7. Factorize $(-125a^3 + 64b^3)$

$$(i) \quad (-6a + 4b)(24a^2 + 20ab + 16b^2)$$

$$(ii) \quad (-5a + 2b)(25a^2 + 17ab + 16b^2)$$

$$(iii) \quad (-5a + 4b)(25a^2 + 20ab + 16b^2)$$

$$(iv) \quad (-4a + 4b)(26a^2 + 20ab + 16b^2)$$

$$(v) (-5a + 6b)(25a^2 + 22ab + 16b^2)$$

8. Factorize $(27a^3 + 8b^3)$

(i) $(2a + 2b)(8a^2 - 6ab + 4b^2)$

(ii) $(3a + 2b)(9a^2 - 6ab + 4b^2)$

(iii) $(3a + 5b)(9a^2 - 3ab + 4b^2)$

(iv) $3a(9a^2 - 9ab + 4b^2)$

(v) $(4a + 2b)(10a^2 - 6ab + 4b^2)$

9. Factorize $(a^3 - 12abc - b^3 - 64c^3)$

(i) $(-b - 4c)(ab + 4ac + b^2 - 4bc + 16c^2)$

(ii) $(a - 3b - 4c)(a^2 - 2ab + 4ac + b^2 - 4bc + 16c^2)$

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

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

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

10. Factorize $(7x+4y)^2 + 2(7x+4y)(3x+9y) + (3x+9y)^2$

(i) $(7x+4y)(3x+9y)$

(ii) $(10x+13y)^2$

(iii) $(-4x+6y)^2$

(iv) $(11x+13y)^2$

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

11. Factorize $(4x+6y)^2 - 2(4x+6y)(3x+8y) + (3x+8y)^2$

(i) $2y^2$

(ii) $(x-2y)^2$

(iii) $(4x+6y)(3x+8y)$

(iv) $(2x-2y)^2$

(v) $(7x+14y)^2$

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

(i) $(ac + bc)(ac - bc)$

(ii) $(ab + bc)(ab + bc)$

(iii) $(ab - bc)(ab - bc)$

(iv) $(ab + bc)(ac + bc)$

(v) $(ab + bc)(ab - bc)$

13. Factorize $9a^3 - 36a$

(i) $(3a^2 + 6)(6a - 3)a$

(ii) $(3a - 6)(3a^2 + 6)a$

(iii) $(3a + 6)(6a - 3)a$

(iv) $(3a + 6)(3a - 6)a$

(v) $(3a + 6)(3a^2 + 6)a$

14. Factorize $(x^2 - 36)$

(i) $(x + 6)(x - 6)$

$$(ii) \quad (x - 9)(x + 4)$$

$$(iii) \quad (x - 6)(x - 6)$$

$$(iv) \quad (x + 6)(x + 6)$$

$$(v) \quad (x + 9)(x - 4)$$

15. Factorize $(9x^2 - 64)$

$$(i) \quad (3x + 8)(3x - 8)$$

$$(ii) \quad (3x - 8)(3x - 8)$$

$$(iii) \quad (3x + 32)(3x - 2)$$

$$(iv) \quad (3x - 32)(3x + 2)$$

$$(v) \quad (3x + 8)(3x + 8)$$

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

$$(i) \quad (8x + 8y)(8x + 8y)$$

$$(ii) \quad (8x - 16y)(8x + 4y)$$

$$(iii) \quad (8x + 8y)(8x - 8y)$$

$$(iv) \quad (8x - 8y)(8x - 8y)$$

$$(v) \quad (8x + 16y)(8x - 4y)$$

17. Factorize $(h^4 - 256)$

$$(i) \quad (h + 4)(h + 4)(h - 4)$$

$$(ii) \quad (h^2 + 16)(h^2 - 8)$$

$$(iii) (h + 4)(h - 4)(h^2 - 8)$$

$$(iv) (h + 4)(h - 4)(h^2 + 16)$$

$$(v) (h + 4)(h - 4)(h - 4)$$

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

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

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

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

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

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

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

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

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

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

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

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

20. Factorize $(ax + by)^2 - (ax - by)^2$

$$(i) 2axby$$

$$(ii) 4(ax)^2(by)^2$$

$$(iii) 2(ax)^2(by)^2$$

$$(iv) 4axby$$

Assignment Key

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