

EduSahara™ Learning Center Assignment**Grade : Class IX, CBSE****Chapter : Polynomials****Name : Factorization**

1. Factorize $(x^2 + x - 42)$

(i) $(x - 6)(-2x + 7)$

(ii) $(x - 6)(x + 7)$

(iii) $(x - 6)(3x + 7)$

(iv) $(x - 6)(2x + 7)$

(v) $(x - 6)7$

2. Factorize $(4x^3 + 20x^2 + 8x - 32)$

(i) $(x + 4)(3x + 4)(3x - 2)$

(ii) $(x + 4)(2x + 4)(2x - 2)$

(iii) $(x + 4)(4x + 4)(5x - 2)$

(iv) $(x + 4)(x + 4)(x - 2)$

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

3. Factorize $(x^4 - 8x^3 - 66x^2 + 648x - 1215)$

(i) $(x - 3)(-2x + 9)(-x - 5)(-x - 9)$

(ii) $(x - 3)9(-5)(-9)$

(iii) $(x - 3)(3x + 9)(3x - 5)(3x - 9)$

(iv) $(x - 3)(2x + 9)(2x - 5)(2x - 9)$

(v) $(x - 3)(x + 9)(x - 5)(x - 9)$

4. Factorize $(25a^2 - 20ab + 4b^2)$

(i) $(6a - 2b)(6a - 2b)$

(ii) $(5a - 4b)(5a - 4b)$

(iii) $(5a - 2b)(5a - 2b)$

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

(v) $5a(5a + b)$

5. Factorize $(16a^2 - 8ab + b^2)$

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

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

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

(iv) $(5a - b)(5a - b)$

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

6. Factorize $(25a^2 - b^2)$

(i) $(-5a + b)(-5a - b)$

(ii) $(-5a + 4b)(-5a + 2b)$

(iii) $(-5a - 2b)(-5a - 4b)$

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

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

7. Factorize $(x^2 + 2xa - 2x + a^2 - 2a - 15)$

(i) $(x + a - 5)(x - a + 3)$

(ii) $(x + a + 3)(x + a - 5)$

(iii) $(x + a + 3)(x - a - 5)$

(iv) $(x - a + 3)(x + a + 5)$

(v) $(x - a - 5)(x + a - 3)$

8. 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)

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

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

(i) $(x - 5y)(2x - y)$

(ii) $(x + 5y)(2x + y)$

(iii) $(x + 5y)(x - 5y)$

(iv) $(x + 5y)(2x - y)$

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

10. Factorize $(9x+5y)^2 + 2(9x+5y)(7x+6y) + (7x+6y)^2$

(i) $(-2x+2y)^2$

(ii) $(17x+11y)^2$

(iii) $(9x+5y)(7x+6y)$

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

(v) $(16x+11y)^2$

11. Factorize $(5x+4y)^2 - 2(5x+4y)(2x+7y) + (2x+7y)^2$

(i) $(7x+11y)^2$

(ii) $(-2x+3y)^2$

(iii) $(4x-3y)^2$

(iv) $(5x+4y)(2x+7y)$

(v) $(3x-3y)^2$

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

(i) $(ab + bc)(ab + bc)$

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

(iii) $(ac + bc)(ac - bc)$

(iv) $(ab - bc)(ab - bc)$

(v) $(ab + bc)(ac + bc)$

13.

Factorize $16a^3 - 25a$

(i) $(4a^2 + 5)(5a - 4)a$

(ii) $(4a + 5)(4a - 5)a$

(iii) $(4a + 5)(4a^2 + 5)a$

(iv) $(4a - 5)(4a^2 + 5)a$

(v) $(4a + 5)(5a - 4)a$

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

(i) $(x + 4)(x - 25)$

(ii) $(x + 10)(x - 10)$

(iii) $(x - 4)(x + 25)$

(iv) $(x + 10)(x + 10)$

(v) $(x - 10)(x - 10)$

15. Factorize $(121x^2 - 36)$

(i) $(11x - 9)(11x + 4)$

(ii) $(11x + 6)(11x + 6)$

(iii) $(11x - 6)(11x - 6)$

(iv) $(11x + 9)(11x - 4)$

(v) $(11x + 6)(11x - 6)$

16. Factorize $(25x^2 - 81y^2)$

(i) $(5x - 9y)(5x - 9y)$

(ii) $(5x - 27y)(5x + 3y)$

(iii) $(5x + 9y)(5x - 9y)$

(iv) $(5x + 27y)(5x - 3y)$

(v) $(5x + 9y)(5x + 9y)$

17. Factorize $(8x^3 + 50x^2y + 98xy^2 + 60y^3)$

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

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

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

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

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

Factorize and divide

18. $(4x^4 - 8x^2 + 4) \div (2x^2 - 2)$

(i) $(-x^2 - 2)$ (ii) $(3x^2 - 2)$

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

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

Factorize and divide

19. $(10x^4 - 9x^3 - 94x^2 - 111x - 36) \div (-x^2 + 3x + 4)$

(i) $(-10x^2 - 21x - 9)$ (ii) $(-10x^2 - 9x + 9)$

(iii) $(-10x^2 + 21x - 9)$ (iv) $(-2x^2 + 5x + 12)$

(v) $(-10x^2 + 9x + 9)$

20. Which of the following is a factor of $33x^2yz^2$?

(i) $33x^2yz^3$ (ii) $33xyz^2$ (iii) $33xy^2z^2$ (iv) $33xyz^3$ (v) x^3yz^2

21. Which of the following is not a factor of $22xyz^5$?

(i) (ii) (iii) (iv)

$22 y z^5$

$22 x y z^4$

$22 x z^5$

$22 x^2 y^2 z^5$

22. Which of the following is a factor of $(4x^4 + y^4 z^5)$?

- (i) $y^4 z^5$ (ii) no factors (iii) y^4 (iv) $4x^4$ (v) $x^2 z$

23. Which of the following is an irreducible factor of $25x^5 y^5 z^2$?

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

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

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

25. Factorize $(x^2 + 6x + 8)$

(i) $(x - 2)(x - 4)$

(ii) $(x - 2)(x + 4)$

(iii) $(x + 2)(x + 4)$

(iv) $(x + 2)(x - 4)$

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

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

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

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

(iii)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$(ii)$$

$$3 (5a - 4b) (4b - 5c) (5c - 5a)$$

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

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

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

32. Factorize $(11a-7b)^3 - (5a-4b)^3 - (6a-3b)^3$

(i) $3 (5a + 4b) (6a - 3b) (11a - 7b)$

(ii) $3 (5a - 4b) (6a + 3b) (11a - 7b)$

(iii) $3 (5a - 4b) (6a - 3b) (11a - 7b)$

(iv) $3 (5a + 4b) (6a + 3b) (-a - b)$

(v) $3 (5a + 4b) (6a + 3b) (11a - 7b)$

33. Factorize $(x^4 + 2x^3 - 7x^2 - 8x + 12)$

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

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

(iii) $(x - 1) (x + 3) (x - 3) (x + 1)$

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

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

34. Factorize $(25x^2 - 25y^2)$

(i) $(5x - 5y) (5x + 5y)$

(ii) $(5x - 5y) (5x - 5y)$

(iii) $(5x + 5y) (5x - 5y)$

(iv) $(5x + 5y) (5x + 5y)$

35. Factorize $(24xy + 8y^2)$

(i) $4x (6x - 2y)$

(ii) $4y (-6x - 2y)$

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

(iv) $4y (6x + 2y)$

(v) $4x (6x + 2y)$

36. Factorize $(20a^2b + 12ab^2)$

(i) $4b (5a - 3b)$

(ii) $4a (5a + 3b)$

(iii) $4ab (5a - 3b)$

(iv) $4ab (-5a - 3b)$

(v) $4ab (5a + 3b)$

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

(i) $2axby$

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

(iii) $4axby$

(iv) $2(ax)^2 (by)^2$

Assignment Key

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