

Factoring Polynomials Worksheet

A. Multiple Choice Questions

(i) Common factor Of $17abc, 34ab^2, 51a^2b$ is

- (a) $17abc$ (b) $17ab$ (c) $17ac$ (d) $17a^2b^2c$

(ii) $a^2 - b^2$ is equal to

- (a) $(a - b)^2$ (b) $(a - b)(a - b)$ (c) $(a + b)(a - b)$ (d) $(a + b)(a + b)$

(iii) Factorized form of $23xy - 46x + 54y - 108$ is

- (a) $(23x+54)(y-2)$ (b) $(23x+54y)(y-2)$ (c) $(23xy+54y)(-46x-108)$ (d) $(23x+54)(y+2)$

(iv) Factorised form of $r^2 - 10r + 21$ is

- (a) $(r-1)(r-4)$ (b) $(r-7)(r-3)$ (c) $(r-7)(r+3)$ (d) $(r+7)(r+3)$

(v) The factorisation of $3a^3 + 6a$ is

- (a) $3a(a^2 + 2)$ (b) $3(a^3 + 2)$ (c) $a(3a^2 + 6)$ (d) $3 \times a \times a \times a + 2 \times 3 \times a$

(vi) $(x + a)(x + b) = x^2 + (a + b)x + \dots$

- (a) $a-b$ (b) ab (c) $a+b$ (d) none of these

(vii) Common factor of x^2y and $-xy^2$ is

- (a) xy (b) x (c) y (d) none of these

(viii) The factors of $x^2 - 9$ are

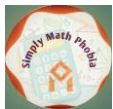
- (a) $(x - 3), (x - 3)$ (b) $(x + 3), (x - 3)$ (c) $(x + 3), (x + 3)$ (d) $(x - 3), (x - 2)$

(ix) The value of $(a + b)^2 - (a - b)^2$ is

- (a) $4ab$ (b) $-4ab$ (c) $2a^2 + 2b^2$ (d) $2a^2 - 2b^2$

(x) The common factor method of factorisation for a polynomial is based on _____property.

- (a) Distributive (b) commutative (c) associative (d) none of these



B. Factorise the following polynomials.

- (i) $x^4 - 16$
- (ii) $4x^2 - 4x - 15$
- (iii) $x^2 - 10x + 25$
- (iv) $x^2 + 7x + 12$
- (v) $4x^2 + 8x$
- (vi) $x^3 + 7x^2 + 12x$
- (vii) $3x^2 - 10x - 8$
- (viii) $x^2 + 3x - 10$
- (ix) $-72x^2y + 24xy + 48xy^2$
- (x) $x^2 + 20x + 75$
- (xi) $2x^2 + 11x + 12$
- (xii) $2x^3 - 3x^2 - 8x + 12$
- (xiii) $x^5 - 3x^3 - 2x^2 + 6$
- (xiv) $a^3 - 4a^2 + 12 - 3a$
- (xv) $\frac{y^2}{9} - 9$

Ans. A.(i) b (ii) c (iii) a (iv) b (v) a (vi) b (vii) a (viii) b (ix) a

- B.(i) $(x^2 + 4)(x - 2)(x + 2)$ (ii) $(2x+3)(2x-5)$ (iii) $(x - 5)^2$ (iv) $(x+3)(x+4)$
- (v) $4x(x+2)$ (vi) $x(x+3)(x+4)$ (vii) $(3x+2)(x-4)$ (viii) $(x+5)(x-2)$ (ix) $24xy(-3x+1+2y)$
- (x) $(x+5)(x+15)$ (xi) $(x+4)(2x+3)$ (xii) $(2x-3)(x-2)(x+2)$ (xiii) $(x^2 - 3)(x^3 - 2)$
- (xiv) $(a-4)(a^2 - 3)$ (xv) $(\frac{y}{3} + 3)(\frac{y}{3} - 3)$