

SPECIAL BINOMIALS FACTORS

No. Special Binomial Factors

1. **Difference of Squares:** $a^2 - b^2 = (a + b)(a - b)$

example: $x^2 - 4 = (x + 2)(x - 2)$

2. **Sum of Squares:** **Prime (cannot be factored)**

example: $x^2 + 4 = \text{Prime}$

3. **Difference of Cubes:** $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

example: $x^3 - 64 = (x - 4)(x^2 + 4x + 16)$

4. **Sum of Cubes:** $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

example: $x^3 + 27 = (x + 3)(x^2 - 3x + 9)$

5. **Perfect Square Trinomial-1:** $(a + b)^2 = a^2 + 2ab + b^2$

example: $(x + 5)^2 = x^2 + 10x + 25$

6. **Perfect Square Trinomial-2:** $(a - b)^2 = a^2 - 2ab + b^2$

example: $(x - 3)^2 = x^2 - 6x + 9$