

Bell Work

Describe the end behavior of the function.

$$f(x) = 3x^7 + x^3 - 1$$

Add/Subtract Polynomials

$$(3x^3 + 2x^2 - x - 7) + (x^3 - 10x^2 + 8)$$

Add/Subtract Polynomials

$$(9y^3 + 3y^2 - 2y + 1) + (-5y^2 + y - 4)$$

Add/Subtract Polynomials

$$(8x^3 - 3x^2 - 2x + 9) - (2x^3 + 6x^2 - x + 1)$$

Add/Subtract Polynomials

$$(2z^2 + 3z) - (3z^2 + z - 4)$$

Multiplying Polynomials

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

Multiplying Polynomials

$$(y + 5)(3y^2 - 2y + 2)$$

Multiplying Polynomials

$$(x - 1)(x + 4)(x + 5)$$



KEY IDEA

Special Product Patterns

Sum and Difference

$$(a + b)(a - b) = a^2 - b^2$$

Example

$$(x + 3)(x - 3) = x^2 - 9$$

Square of a Binomial

$$(a + b)^2 = a^2 + 2ab + b^2$$

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

Example

$$(y + 4)^2 = y^2 + 8y + 16$$

$$(2t - 5)^2 = 4t^2 - 20t + 25$$

Cube of a Binomial

$$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$$

$$(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$$

Example

$$(z + 3)^3 = z^3 + 9z^2 + 27z + 27$$

$$(m - 2)^3 = m^3 - 6m^2 + 12m - 8$$

$$(x - 2)^4$$

$$(3y + 1)^3$$