

7.1 Standard Form

$$4x^2 + 3x^5 + 2x - x^3 - 7$$

$$3x^5 - x^3 + 4x^2 + 2x - 7$$

$$5a - 3ab^2 + 6a^2b^2 - 2a^2b + b$$

$$6a^2b^2 - 2a^2b - 3ab^2 + 5a + b$$

$$4x + x^2 + 1$$

$$x^2 + 4x + 1$$

$$\frac{5}{x^2} + 3x + 1$$

$$5x^{-2} + 3x + 1$$

$$5\sqrt{x} + 8$$

$$5x^{\frac{1}{2}} + 8$$

$$a^{-x} + b$$

$$2^x + 1$$

$$y = 2^x + 1$$

$$x = 5$$

Classify by the number of terms

 x monomial $x+4$ binomial x^2+2x+3 trinomial x^3-4x^2+5x+1 polynomialClassify by degree $5x^0$ 5⁰ Constant 0 x^1 3 x^1 Linear 1 $2x+4$ x^2+4 Quadratic 2 x^3+5x^2+2x Cubic 3 $8x^4+2x^3-4x+1$ Quartic 4 $4x^3+2x^2-5x-8$
3 2 1 0

Polynomial 3 Cubic

 a^2b 3 a^4b^2c 7 $4x^2+8x+1$ Quadratic Trinomial
Degree Number of terms x^2-1

Quadratic Binomial

 x^3+8x^2-4x-2

Cubic Polynomial

Evaluate

$$x^3 + 3x^2 + 2x - 1$$

$$x = 3$$

$$3^3 + 3(3^2) + 2(3) - 1$$

$$27 + 27 + 6 - 1$$

$$59$$

$$(x^2 + 5x - 2) + (3x^2 + 8x - 4)$$

Combine
like
Terms

$$4x^2 + 13x - 6$$

Quadratic Trinomial

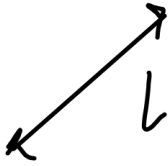
$$(x^2 - 3x + 5) - (2x^2 - 5x - 1)$$

$$-x^2 + 2x + 6$$


$$x^2 - 3x + 5 - 2x^2 + 5x + 1$$

Graph
 $y = 5$
 Constant Horizontal Line


$y = 3x + 2$
 Linear Line



$y = x^2 + 4$
 Quadratic Parabola

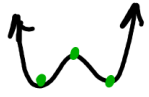


$y = x^3 - 4x^2 + 2x + 1$
 $y = x^3 - 8$
 Cubic S Shape



2 turns

$y = x^4 + x^2 - 1$
 Quartic W Shape



3 turns

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12, 18, 30, 40, 42