## 8.1 Adding and Subtracting Polynomials

A polynomial in standard form may look like this:

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

**Standard form** When the exponents of a polynomial are in descending order from greatest to least.
Note: There are no negative exponents.

The **degree** of a polynomial is the highest exponent.
The above polynomial has a **degree of 3**.

Nov 27-9:22 AM

You can name a polynomial based on its degree or the number of monomials it contains

| Polynomial | Degree | Name Using Degree | Number of Terms | Name Using Number of Terms |
|---|---|---|---|---|
| 6 | 0 | Constant | 1 | Monomial |
| $5x + 9$ | 1 | Linear | 2 | Binomial |
| $4x^2 + 7x + 3$ | 2 | Quadratic | 3 | Trinomial |
| $2x^3$ | 3 | Cubic | 1 | Monomial |
| $8x^4 - 2x^3 + 3x$ | 4 | Fourth degree | 3 | Trinomial |

Write each polynomial in standard form. What is the name of the polynomial based on its degree and number of terms?

$3x + 4x^2$

$4x^2 + 3x$

Quadratic, Binomial

$2x - 3 + 8x^2$

$8x^2 + 2x - 3$

Quadratic, trinomial

Apr 15-1:17 PM

**RECALL: LIKE TERMS!**

Like terms have the same variable to the same power. Numbers are like terms.

**Like terms:** $x + 2x + 3x = 6x$

$2a^2 + 6a^2 + 7a^2 = 15a^2$

$3 + 6 + 2 + 13 = 24$

**Not like:** $2x + 5y - 2z$

$5a^2 + 6a - 1$

Aug 30-2:46 PM

**Find the sum of:**

$(3x^2 + 2x^3 - 4x + 10) + (2x^3 - 3x^2 + 9 + 6x)$

$4x^3 + 2x + 19$

cubic trinomial

$(2x^2 + x^4 - 2x + 4) + (6x^3 - 2x^2 + 9x + 6x^4)$

$7x^4 + 6x^3 + 7x + 4$

4th degree polynomial

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**Find the sum: Write the answers in standard form:**

$(5x^3 - x + 2x^2 + 7) + (3x^2 + 7 - 4x) + (4x^2 - 8x - x^3)$

$4x^3 + 9x^2 - 13x + 14$

cubic polynomial

$(2x^2 + x - 5) + (x + x^2 + 6)$

$3x^2 + 2x + 1$

Quadratic trinomial

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**Find the difference:**

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

$-5x^2 - 4x + 12$

Quadratic trinomial

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

$x^2 - 4x + 7$

Quadratic trinomial

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**Find the difference:**

$(x^2 - 8) + (7x + 4x^2)$

$-3x^2 - 7x - 8$

Quadratic trinomial

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

$-4x^2 + 9x + 4$

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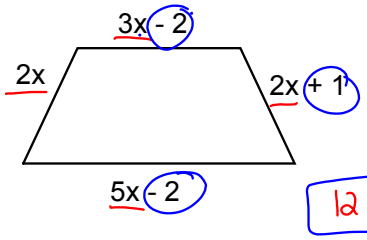
**Write a polynomial that represents the perimeter.**




$12x - 3$

linear binomial

Apr 7-11:45 AM

Find the sum or difference.

$(x^2 + 11xy - 3y^2) + (-2x^2 - xy + 4y^2)$

$-x^2 + 10xy + y^2$

$(8a^2b - 6a) + (2a^2b + 4b - 19)$

$6a^2b - 6a + 4b - 19$

Apr 7-11:48 AM

Classwork: **p.499 #2 - 34 even**

**Copy the question.**

## Final Five

**$(3x^2 + 6x - 1) - (4x^2 + 5x + 9)$.**

a) $-x^2 + x - 10$

b) $-x^2 - x + 10$

c) $7x^2 + 11x + 8$

d) $7x^2 + 11x + 10$

Nov 11-11:08 AM