

7.1

Adding and Subtracting Polynomials

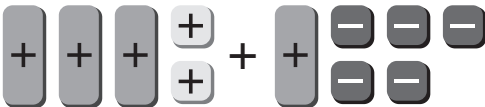
For use with Exploration 7.1

Essential Question How can you add and subtract polynomials?

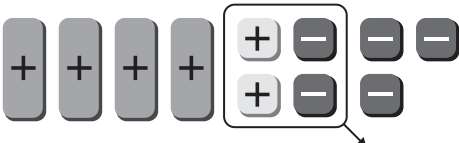
1 EXPLORATION: Adding Polynomials

Go to *BigIdeasMath.com* for an interactive tool to investigate this exploration.

Work with a partner. Write the expression modeled by the algebra tiles in each step.

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

Step 2  _____

Step 3  _____

Step 4  _____


2 EXPLORATION: Subtracting Polynomials

Go to *BigIdeasMath.com* for an interactive tool to investigate this exploration.

Work with a partner. Write the expression modeled by the algebra tiles in each step.

Step 1  $(x^2 + 2x + 2) - (x - 1)$

Step 2  _____

Step 3  _____

7.1 Adding and Subtracting Polynomials (continued)

2 EXPLORATION: Subtracting Polynomials (continued)

Step 4

Step 5

Communicate Your Answer

3. How can you add and subtract polynomials?

4. Use your methods in Question 3 to find each sum or difference.

a. $(x^2 + 2x - 1) + (2x^2 - 2x + 1)$

b. $(4x + 3) + (x - 2)$

c. $(x^2 + 2) - (3x^2 + 2x + 5)$

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

7.1

Notetaking with Vocabulary

For use after Lesson 7.1

In your own words, write the meaning of each vocabulary term.

monomial

degree of a monomial

polynomial

binomial

trinomial

degree of a polynomial

standard form

leading coefficient

closed

Notes:

7.1 Notetaking with Vocabulary (continued)**Core Concepts****Polynomials**

A **polynomial** is a monomial or a sum of monomials. Each monomial is called a *term* of the polynomial. A polynomial with two terms is a **binomial**. A polynomial with three terms is a **trinomial**.

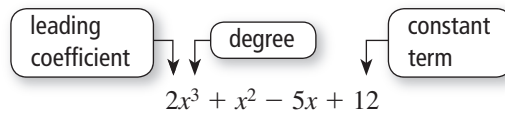
Binomial

$$5x + 2$$

Trinomial

$$x^2 + 5x + 2$$

The **degree of a polynomial** is the greatest degree of its terms. A polynomial in one variable is in **standard form** when the exponents of the terms decrease from left to right. When you write a polynomial in standard form, the coefficient of the first term is the **leading coefficient**.

**Notes:****Extra Practice**

In Exercises 1–8, find the degree of the monomial.

1. $-6s$

2. w

3. 8

4. $-2abc$

5. $7x^2y$

6. $4r^2s^3t$

7. $10mn^3$

8. $\frac{2}{3}$

7.1 Notetaking with Vocabulary (continued)

In Exercises 9–12, write the polynomial in standard form. Identify the degree and leading coefficient of the polynomial. Then classify the polynomial by the number of terms.

9. $x + 3x^2 + 5$

10. $\sqrt{5}y$

11. $3x^5 + 6x^8$

12. $f^2 - 2f + f^4$

In Exercises 13–16, find the sum.

13. $(-4x + 9) + (6x - 14)$

14. $(-3a - 2) + (7a + 5)$

15. $(x^2 + 3x + 5) + (-x^2 + 6x - 4)$

16. $(t^2 + 3t^3 - 3) + (2t^2 + 7t - 2t^3)$

In Exercises 17–20, find the difference.

17. $(g - 4) - (3g - 6)$

18. $(-5h - 2) - (7h + 6)$

19. $(-x^2 - 5) - (-3x^2 - x - 8)$

20. $(k^2 + 6k^3 - 4) - (5k^3 + 7k - 3k^2)$