

9.1 - Adding and Subtracting Polynomials

Vocabulary:

Polynomial
Degree
Terms

ex: $x^4 + 8x^3 + 2x^2 - 3x + 5$

Polynomial	Degree	Name Using Degree	Number of Terms	Name Using Number of Terms
$7x + 4$	1	linear	2	binomial
$3x^2 + 2x + 1$	2	quadratic	3	trinomial
$4x^3$	3	cubic	1	monomial
$9x^4 + 11x$	4	fourth degree	2	binomial
5	0	constant	1	monomial

Degree

monomial
adding powers

Polynomial
highest power

$$7x^2$$

polynomial: a monomial or the sum of 2 or more monomials

$$4x^5 + 6x^2 - 2x$$

fifth degree trinomial

1 EXAMPLE Find the degree of each monomial.

a. 18 0

b. $3xy^3$ $3+1 = 4$

c. $6c^1$ 1

2 EXAMPLE

power decreases from left to right
 Write each polynomial in standard form. Then name each polynomial by its degree and the number of its terms.

a. $-2 + 7x$

$$7x^1 - 2$$

linear binomial

b. $3x^5 - 2 - 2x^5 + 7x$

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

fifth degree trinomial

Place each polynomial in standard form. Name each expression based on its degree and number of terms.

11. $7a^3 + 4a - 12$
 $7a^3 + 4a - 12$

cubic trinomial

19. $y - 7y^3 + 15y^8$
 $15y^8 - 7y^3 + y$

eight degree trinomial

3 EXAMPLE Simplify $(6x^2 + 3x + 7) + (2x^2 - 6x - 4)$.

$$\begin{array}{r} (6x^2 + 3x + 7) + (2x^2 - 6x - 4) \\ + 2x^2 - 6x - 4 \\ \hline \end{array}$$

$$8x^2 - 3x + 3$$

Simplify:

$$25. (1g^4 + 4g) + (9g^4 + 7g)$$

$$10g^4 + 11g$$

4

EXAMPLE

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

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

Simplify:

$$33. (6w^2 - 3w + 1) + (w^2 + w + 9)$$

$$5w^2 - 4w + 10$$

Homework: pg. 497 #2, 4, 6, 18, 20, 26, 27, 32, 34, 40, 41, 74