Section 7.1 Adding and Subtracting Polynomials

monomial a number, a variable, or the product of a number and one or more variables with whole number exponents

degree of a monomial the sum of the exponents of the variables in the monomial

polynomial a monomial or a sum of monomials

degree of a polynomial the greatest degree of its terms

# of terms	Classification
1	Monomial
2	Binomial
3	Trinomial
4+	4-term Polynomial

standard form a polynomial is in standard form when the exponents of the terms decrease from left to right

leading coefficient the coefficient of the first term when the polynomial is written in standard form

Degree of Polynomial	Classification
0	Constant
1	Linear
2	Quadratic
3	Cubic
4	Quartic
5	Quintic
6+	6^{th} Degree Polynomial

Extra Practice

Find the degree of the monomial.

1. $-6s$ deg = 1	2. w deg = 1	3. 8 deg = 0	4. -2abc deg = 3
5. $7x^2y$ deg = 3	6. $4r^2s^3t$ deg = 6	7. $10mn^3$ deg = 4	8. $\frac{2}{3}$ deg = 0

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. $x + 3x^2 + 5$ SF: $3x^2+x+5$ Deg = 2 (Quadratic) LC: 3 Trinomial	10. $\sqrt{5}\,y$ SF: $\sqrt{5}\,y$ Deg = 1 (Linear) LC: $\sqrt{5}$ Monomial
11. $3x^5 + 6x^8$ SF: $6x^8+3x^5$ Deg = 8 LC: 6 Binomial	12. $f^2 - 2f + f^4$ SF: f^4+f^2-2f Deg = 4 (Quartic) LC: 1 Trinomial

Find the sum.

13. $(-4x + 9) + (6x - 14)$ $2x - 5$	14. $(-3a - 2) + (7a + 5)$ $4a + 3$
15. $(x^2 + 3x + 5) + (-x^2 + 6x - 4)$ $9x + 1$	16. $(t^2 + 3t^3 - 3) + (2t^2 + 7t - 2t^3)$ $t^3 + 3t^2 + 7t - 3$

Find the difference. (add the opposite)

17. $(g - 4) - (3g - 6)$ $g - 4 - 3g + 6$ $-2g + 2$	18. $(-5h - 2) - (7h + 6)$ $-5h - 2 - 7h - 6$ $-12h - 8$
19. $(-x^2 - 5) - (-3x^2 - x - 8)$ $-x^2 - 5 + 3x^2 + x + 8$ $2x^2 + x + 3$	20. $(k^2 + 6k^3 - 4) - (5k^3 + 7k - 3k^2)$ $k^2 + 6k^3 - 4 - 5k^3 - 7k + 3k^2$ $k^3 + 4k^2 - 7k - 4$