Vocabulary Flash Cards

complex conjugates *Chapter 4 (p. 199)*	**end behavior** *Chapter 4 (p. 159)*
even function *Chapter 4 (p. 215)*	**factor by grouping** *Chapter 4 (p. 181)*
factored completely *Chapter 4 (p. 180)*	**finite differences** *Chapter 4 (p. 220)*
local maximum *Chapter 4 (p. 214)*	**local minimum** *Chapter 4 (p. 214)*

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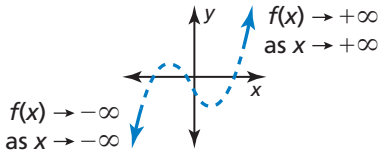
Vocabulary Flash Cards

The behavior of the graph of a function as x approaches positive infinity or negative infinity



Pairs of complex numbers of the forms $a + bi$ and $a - bi$, where $b \neq 0$

$5 + 2i$ and $5 - 2i$

A method of factoring a polynomial by grouping pairs of terms that have a common monomial factor

$$t^3 + t^2 - 9t - 9 = t^2(t + 1) - 9(t + 1)$$
$$= (t^2 - 9)(t + 1)$$
$$= (t - 3)(t + 3)(t + 1)$$

For a function f, $f(-x) = f(x)$ for all x in its domain

$f(x) = x^2$

$f(x) = 3x^4 - 2x^2$

The differences of consecutive y-values in a data set when the x-values are equally spaced

Equally-spaced *x*-values

x	–3	–2	–1	0	1	2	3
y	9	4	1	0	1	4	9

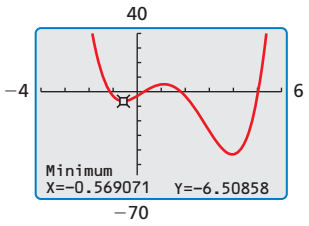
first differences: –5 –3 –1 1 3 5

second differences: 2 2 2 2 2

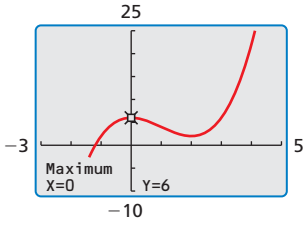
A polynomial written as a product of unfactorable polynomials with integer coefficients

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

The y-coordinate of a turning point of a function when the point is lower than all nearby points



The y-coordinate of a turning point of a function when the point is higher than all nearby points



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Vocabulary Flash Cards

odd function *Chapter 4 (p. 215)*	**Pascal's Triangle** *Chapter 4 (p. 169)*
polynomial *Chapter 4 (p. 158)*	**polynomial function** *Chapter 4 (p. 158)*
polynomial long division *Chapter 4 (p. 174)*	**quadratic form** *Chapter 4 (p. 181)*
repeated solution *Chapter 4 (p. 190)*	**synthetic division** *Chapter 4 (p. 175)*

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Vocabulary Flash Cards

A triangular array of numbers such that the numbers in the nth row are the coefficients of the terms in the expression of $(a+b)^n$ for whole number values of n 1 1 1 1 2 1 1 3 3 1 1 4 6 4 1 1 5 10 10 5 1	For a function f, $f(-x) = -f(x)$ for all x in its domain $f(x) = x^3$ $f(x) = 2x^5 + x^3$
A function of the form $f(x) = a_n x^n + a_{n-1}x^{n-1} + \cdots + a_1 x + a_0$, where $a_n \neq 0$, the exponents are all whole numbers, and the coefficients are all real numbers $f(x) = 3x^3 + 4x^2 + 2x - 1$	A monomial or a sum of monomials $5x + 2$ $x^2 + 5x + 2$
An expression of the form $au^2 + bu + c = 0$, where u is an algebraic expression $16x^4 - 81 = (4x^2)^2 - 81$ $= u^2 - 81$, where $u = 4x^2$	A method to divide a polynomial $f(x)$ by a nonzero divisor $d(x)$ to yield a quotient polynomial $q(x)$ and a remainder polynomial $r(x)$ $x+1 \overline{)\, x^2 + 4x + 2}$ $x + 3$ $x^2 + x$ $3x + 2$ $3x + 3$ -1 $\frac{x^2 + 4x + 2}{x+1} = x + 3 - \frac{1}{x+1}$
A shortcut method to divide a polynomial by a binomial of the form $x - k$ You can use synthetic division to divide $x^2 + 4x + 2$ by $x + 1$. $-1 \mid 1 \quad 4 \quad 2$ $\quad\quad -1 \quad -3$ $\quad 1 \quad 3 \quad -1$ $\frac{x^2 + 4x + 2}{x+1} = x + 3 - \frac{1}{x+1}$	A solution of an equation that appears more than once The equation $(x+2)^2 = 0$ has a repeated solution of $x = -2$.

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