Cheatography

Math M03 Quiz #2 Cheat Sheet

by Berger42 via cheatography.com/77212/cs/19125/

Dealing With Indexes

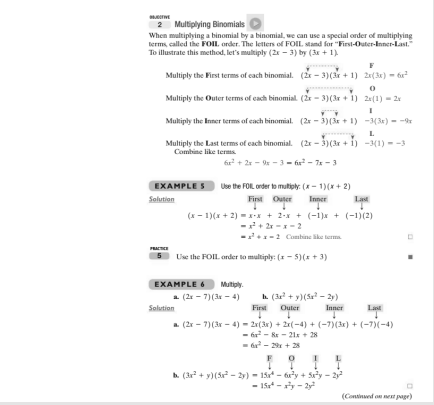
If Odd	then nothing happens
If Even	then use absolute value bars
If term power is even and index is odd	then use absolute bars if answer is negative

Put absolute value bars on variables

Exponents

$(a^n)^m=a^{n+m}$	$a^m/a^n=a^{m-n}$
$a^0=1$	$a^{-n}=1/a^n$

FOIL Method



OBJECTIVE 2 Multiplying Binomials

When multiplying a binomial by a binomial, we can use a special order of multiplying terms, called the **FOIL** order. The letters of FOIL stand for "**F**irst-**O**uter-**I**nner-**L**ast." To illustrate this method, let's multiply $(2x - 3)$ by $(3x + 1)$.

Multiply the **F**irst terms of each binomial. $(2x - 3)(3x + 1)$ F $2x(3x) = 6x^2$

Multiply the **O**uter terms of each binomial. $(2x - 3)(3x + 1)$ O $2x(1) = 2x$

Multiply the **I**nner terms of each binomial. $(2x - 3)(3x + 1)$ I $-3(3x) = -9x$

Multiply the **L**ast terms of each binomial. $(2x - 3)(3x + 1)$ L $-3(1) = -3$

Combine like terms. $6x^2 + 2x - 9x - 3 = 6x^2 - 7x - 3$

EXAMPLE 5 Use the FOIL order to multiply: $(x - 1)(x + 2)$

Solution First Outer Inner Last

$(x - 1)(x + 2) = x \cdot x + 2 \cdot x + (-1)x + (-1)(2)$
$= x^2 + 2x - x - 2$
$= x^2 + x - 2$ Combine like terms.

PRACTICE 5 Use the FOIL order to multiply: $(x - 5)(x + 3)$

EXAMPLE 6 Multiply.

a. $(2x - 7)(3x - 4)$ b. $(3x^2 + y)(5x^2 - 2y)$

Solution First Outer Inner Last

a. $(2x - 7)(3x - 4) = 2x(3x) + 2x(-4) + (-7)(3x) + (-7)(-4)$
$= 6x^2 - 8x - 21x + 28$
$= 6x^2 - 29x + 28$

F O I L

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

(Continued on next page)

Factoring x2+bx+c

Find a 2 numbers whose sum is b and products of c

More factoring

1. 3xy-4x-12y+16
2. x(3y-4) 4(3y-4)
3.(3y-4)(x-4)

*Between 1&2: factor first 2 terms and last 2 terms separately
Between 2&3: remove the numbers on the outside and put them in parenthesis

Greatest common Factor

letters: each term has to have one	Numbers: the highest number all of terms can multiply into

letters:Chose the one with the lowest exponent

Complex Fractions

Simplify the numerator and the denominator of the complex fraction so that each is a single fraction.
Perform the indicated division by multiplying the numerator of the complex fraction by the reciprocal of the denominator of the complex fraction.
Simplify if possible.

Rational function

f(x)=p(x)/q(x)

Solve it like a function

Finding domain:
Demoninator=0
Solve
Those values are the excluded values
Solve the rest of the equation
if you get the excluded value your answer is no real solution

Rational expressions

Multiplication	Factor denominator, mutliply, reduce
Divison	flip 2nd equation and multiply
Unlike denominators + & -	Factor denominator, Find LCD,simplify top

$x+2/x^2 + x - 42 * x+7/x^2 - 4$

$x+2/(x-6)(x+7) * x+7/(x-2)(x+2)$
$x-2/x-6$

$8/x-2+x - 6/x^2-4+2/x+2$

$8/x-2+x - 6/(x+2)(x-2)+2/x+2$

$8+x-6+2$
$x-16$

Solving with Scientific notation

separate between the operation for each term then solve each, then combine

$(2x10^3)(1.8x10^{-7})$

$2x1.8=3.6$

$10^3x10^{-7}=10^{-4}$
Answer: $3.6x10^{-4}$

Special case and FACTORING

	1.(a+b)(a-b)= a^2-b^2	
Perfect Square Trinomial	2. $(a+b)^2=a^2+2ab+b^2$	4. $(a-b)^2=a^2-2ab+b^2$
Sum & Difference of Cubes	3.$a^3-b^3=(a-b)(a^2+ab+b^2$	5.$a^3+b^3=(a+b)(a^2-ab+b^2$
Difference of Square	6.$(a- b)^2=(a-b)(a+b)$	

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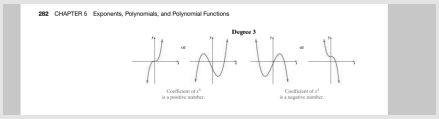
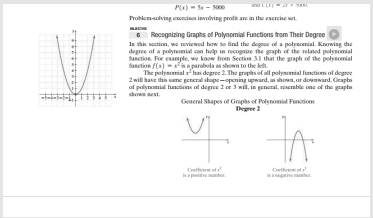
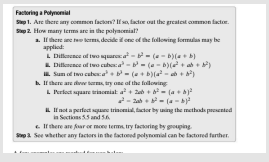
Equations And Graphs



Equations and Graphs 2



MORE Factoring



Functions

f(x)=x+4 when x=4- >

solve by replacing the x with the one inside the f()

Graphing

it'll ask for you to solve the equation then graph your solutions, they should be x

Rational equations

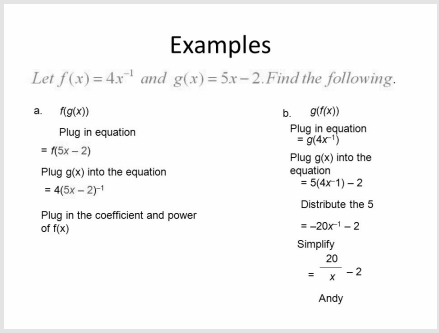
Factor Denominators find excluded values

Find LCD of all terms multiply by LCD

check solution

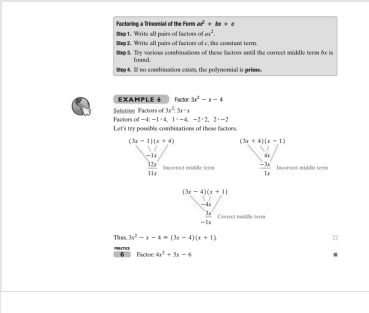
*always have at least 1 fraction

Solving f(x)

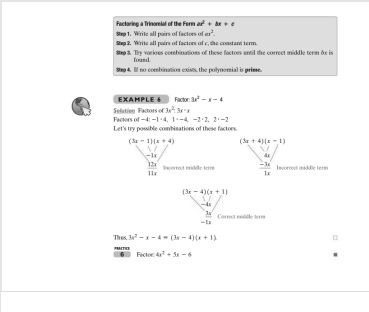


Replace the x in the equation (next to the letter) with the equation that comes after the equal sign

Factoring Trinomials



Factoring trinomials 2



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