U1D1_T Operations with Polynomials

Sunday, February 3, 2019 7:55 PM

U1D1_T Operation...

MATH CONTESTS!!!!! SIGN UP BY TOMORROW!!

U1D1 **Warm -up**: Simplify.

a) $x^2 + 2x + 3 - x^2 - x - 1$

$= x + 2$

b) $yx^2 + 2xy^2 - 2x^2y + 4y^2x$

$= -x^2y + 6xy^2$

MCR 3UI **Operations with Polynomials**

Examples: Simplify each of the following expressions.

(a) $2x(3x - 5) - 4x(x - 7)$

$= 6x^2 - 10x - 4x^2 + 28x$

$= 2x^2 + 18x$

(b) $3[4 - 2(y - 3)] + 4[3(2 - y) - 5]$

$= 3[4 - 2y + 6] + 4[6 - 3y - 5]$

$= 3(10 - 2y) + 4(1 - 3y)$

$= 30 - 6y + 4 - 12y$

$= 34 - 18y$ OR $-18y + 34$

(c) $2(7 - 3x)(4 + x)$

$= 2[28 + 7x - 12x - 3x^2]$

$= -6x^2 - 10x + 56$

(d) $(x^2 + 2x + 3)(x^2 - x - 1)$

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

$= x^4 + x^3 - 5x - 3$

$(x-2y)^2$ * There is no power of a sum or power of a difference rule.

Power of a product rule

$(2x^3y^2)^5$

$= (2)^5(x^3)^5(y^2)^5$

$= 32x^{15}y^{10}$

Power of a quotient rule

$\left(\frac{x^2}{y^3}\right)^5$

$= \frac{x^{10}}{y^{15}}$

$(x-2y)(x-2y)$

$= x^2 - 4xy + 4y^2$

Square the first
Square the last
Twice the product
Have a blast!

(e) $(2x + 3y)(x - y) - 4(x - 2y)^2 + 5(x^2 - y^2)$

$= 2x^2 - 2xy + 3xy - 3y^2 - 4(x-2y)(x-2y) + 5x^2 - 5y^2$

$= 7x^2 + xy - 8y^2 - 4(x^2 - 2xy - 2xy + 4y^2)$

$= 7x^2 + xy - 8y^2 - 4(x^2 - 2xy - 2xy + 7y^2)$

$= 7x^2 + xy - 8y^2 - 4x^2 + 16xy - 16y^2$

$= 3x^2 + 17xy - 24y^2$

U1D1 HW: Pg. 29 #1cf, 2cd
Pg. 31 #8cd, 9adgk, 10f
Pgs. 33-34 # 11fh, 12cd, 13bdf, 15cl
pg. 34 #19 (BOLD ⟹ challenge)