Warm Up

Simplify.

1) $3b^{1} \cdot 4b^{3}$

$12b^{4}$

2) $(2m^{4})^{3}$

$2^{3}m^{12}$

$8m^{12}$

Simplify. Your answer should contain only positive exponents.

3) $\dfrac{3x^{4}}{x^{2}}$

$3x^{4-2}$

$3x^{2}$

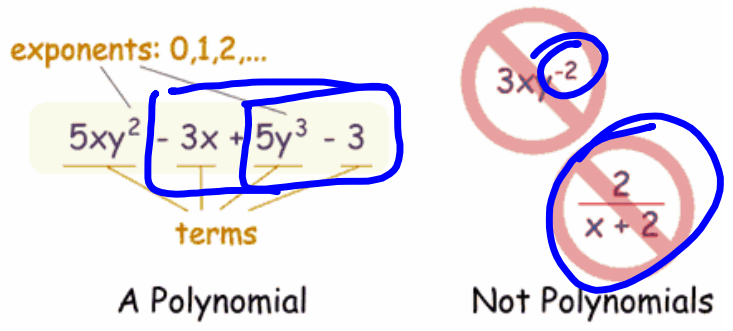
2-1 Adding and Subtracting Polynomials

Objective: I will be able to add and subtract polynomials.

A polynomial can have constants, variables and exponents, but never division by a variable.

constants (like **3**, **-20**, or ½)
variables (like ***x*** and ***y***)
exponents (like the 2 in y^2), but only **0, 1, 2, 3, ...** etc are allowed
... **not** division by a variable (so something like **2/x** is right out)

Polynomial or Not?



Add each polynomial by combining like terms.

1. $(4x+3)+(6x+2)$

$4x+3+6x+2$

$10x+5$

2. $(2x-3)+(4-6x)$

$2x-3+4-6x$

$-4x+1$

3. $(2y^2-2y+7)+(y^2-11+12y)$

$2y^2-2y+7+y^2-11+12y$

$3y^2+10y-4$

You try...

1. $(2x+7)+(2x+3)$

$2x+7+2x+3$

$4x+10$

2. $(8x+5)+(-2x-9)$

$6x+-4$

3. $(8y^2+5-y)+(12y^2+3y-9)$

$8y^2+5-y+12y^2+3y-9$

$20y^2-4+2y$

$-4+20y^2+2y$

Subtract each polynomial.

1. $(4x+3)-(6x+2)$

$4x+3-6x-2$

$-2x+1$

2. $(2x-3)-(4-6x)$

$2x-3-4+6x$

$8x-7$

3. $(8y^2+5-y)-(12y^2+3y-9)$

$8y^2+5-y-12y^2-3y+9$

$-4y^2-4y+14$

You try? Right now!

1. $(2x+7)-(2x+3)$

$2x+7-2x+3$ $2x-2x=0$ $7-3=4$

4

2. $(8x+5)-(-2x-9)$

$8x+5+2x+9$

$10x+14$

3. $(2y^2-2y+7)-(y^2-11+12y)$

$7+11$

$2y^2-2y+7-y^2+11-12y$

$y^2+18-14y$

Be careful! You can only combine like terms.

$$\left(y^4-2y+6y^2\right)+\left(2y^2-11y^4+12y-3y^3\right)$$