Polynomials



A ***polynomial*** is one term or the sum of terms whose variables have whole-number exponents.

$3x^{2} + 2x^{1} - 8$

term

Polynomials

Just like there are many different types of chairs, there are many different types of polynomials.

Monomials...

Monomials are polynomials with ONE term.

14

x

$11y^2$

"Terms are numbers, variables,
or the
product of numbers and variables

Jay Leno's monologue

Binomials...

Example

Example

Binomials are polynomials with TWO terms.

Example

$7x+3$

$12y-x$

$13x^2+x$

Terms are separated by "+" and "-" signs!

Trinomials...

Trinomials are polynomials with THREE terms.

$-6x + 7y - 2$

$7x^2+8x+7$

$8+5m-7m^2$

Exampl Example Example

Monomial	Binomial	Trinomial
$6x^{71}$	$8b+2$	$6x^2-5x+8$
	$10x-5w$	$7y+9z-q$

Sort the following polynomials into the above categories:

The coefficient of the variable... $15x$ ... is 15.

The coefficient is the number in front of the variable.

Degree of a Polynomial

The term with the greatest exponent determines the degree of the polynomial.

$5x-3x^{2}+7$

This polynomial has a degree of 2.

$5x^3+7x^8-3x+3x^2+9$

This polynomial has a degree of_____, because the _____ exponent is _____.

The term "+9" has a degree of_____, because there is no variable with it. It is called a "constant", because this term will never change in value.

Polynomials are written in descending order.
Each term is written
from the highest degree
to the lowest.

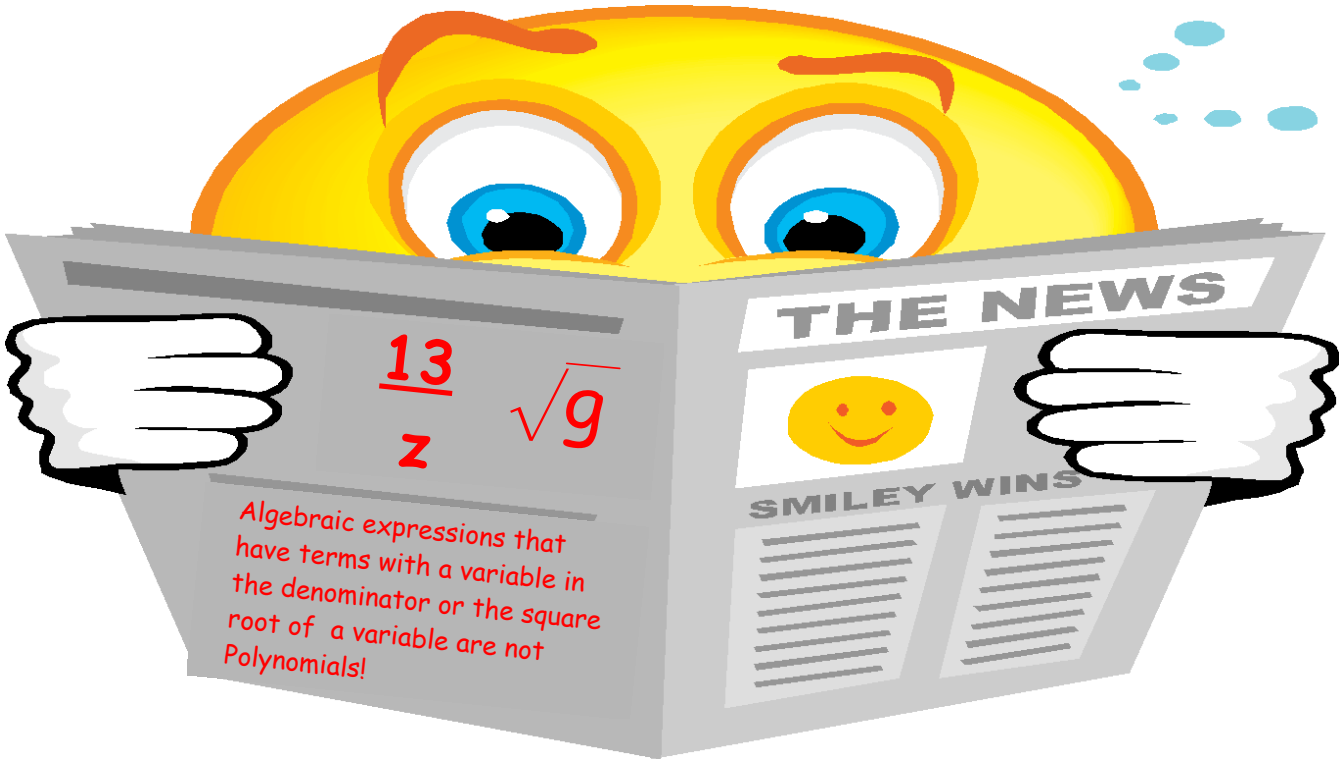
$5x^3-3x^4-x+7+4x^2$

will be written as...

$-3x^4+5x^3+4x^2-x+7$

120

$5\downarrow \times 4 \times 3 \times 2 \times 1$


THE NEWS
SMILEY WINS
13/z
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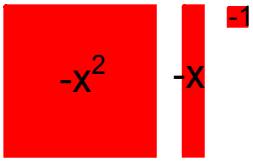
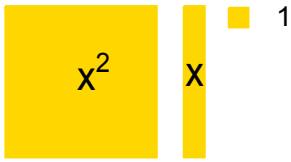
Algebraic expressions that have terms with a variable in the denominator or the square root of a variable are not Polynomials!

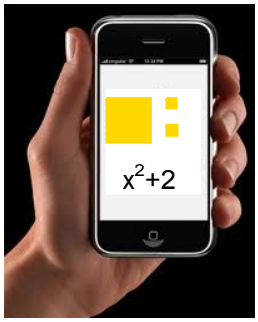
Modelling Polynomials

$3x+4$

$2x^2-4x+2$



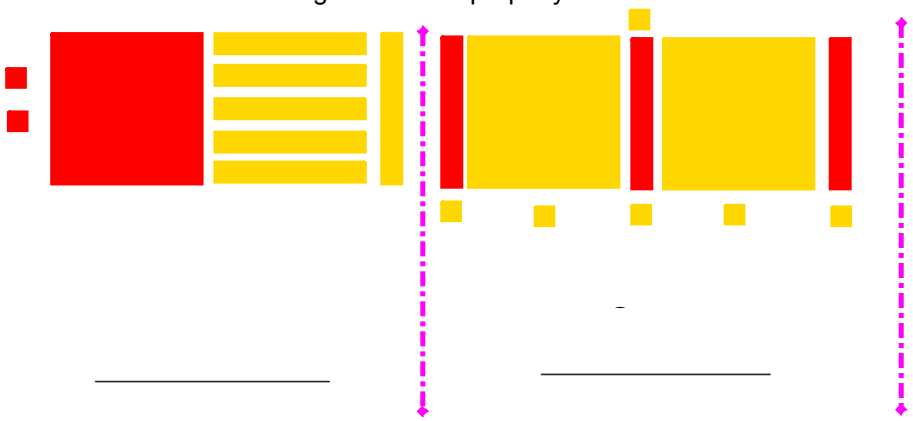


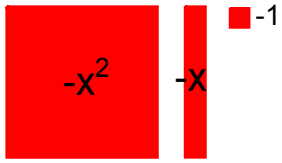


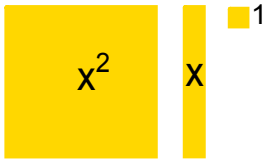
Modelling Polynomials

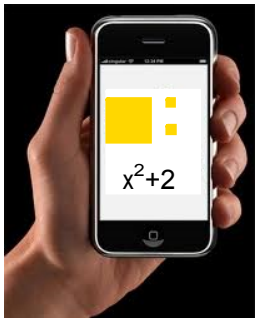
Write the algebraic expression that represents each model.

Don't forget to write it properly!









Check out pages 214 - 216

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