Polynomials

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

Polynomials

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

Monomials...

Monomials are polynomials with ONE term.

Jay Leno's monologue

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Example

x

Example

$11y^2$

Example

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

3

Binomials...

Binomials are polynomials with TWO terms.

$7x+3$

Example

$12y-x$

Example

Example

$13x^2+x$

Terms are separated by ___ and ___ signs!

Trinomials...

Trinomials are polynomials with THREE terms.

$-6x + 7y - 2$

Example

$7x^2 + 8x + 7$

Example

$8 + 5m - 7m^2$

Example

Monomial	Binomial	Trinomial
6x	10x-5w	$6x^2$-5x+8
8b+2		7y+9z-q
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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 __8__, because the largest exponent is __8__.

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The term "+9" has a degree of __0__, 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...

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

$$\frac{13}{z} \qquad \sqrt{g}$$

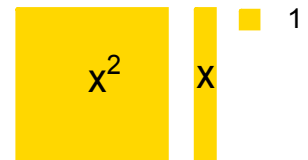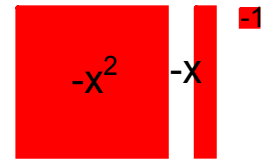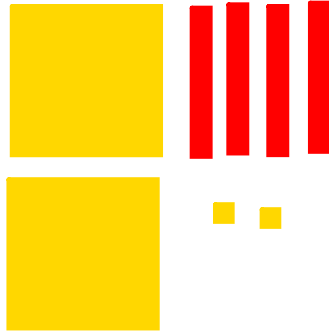Algebraic expressions that have terms with a variable in the denominator or the square root of a variable are not Polynomials!

THE NEWS

SMILEY WINS
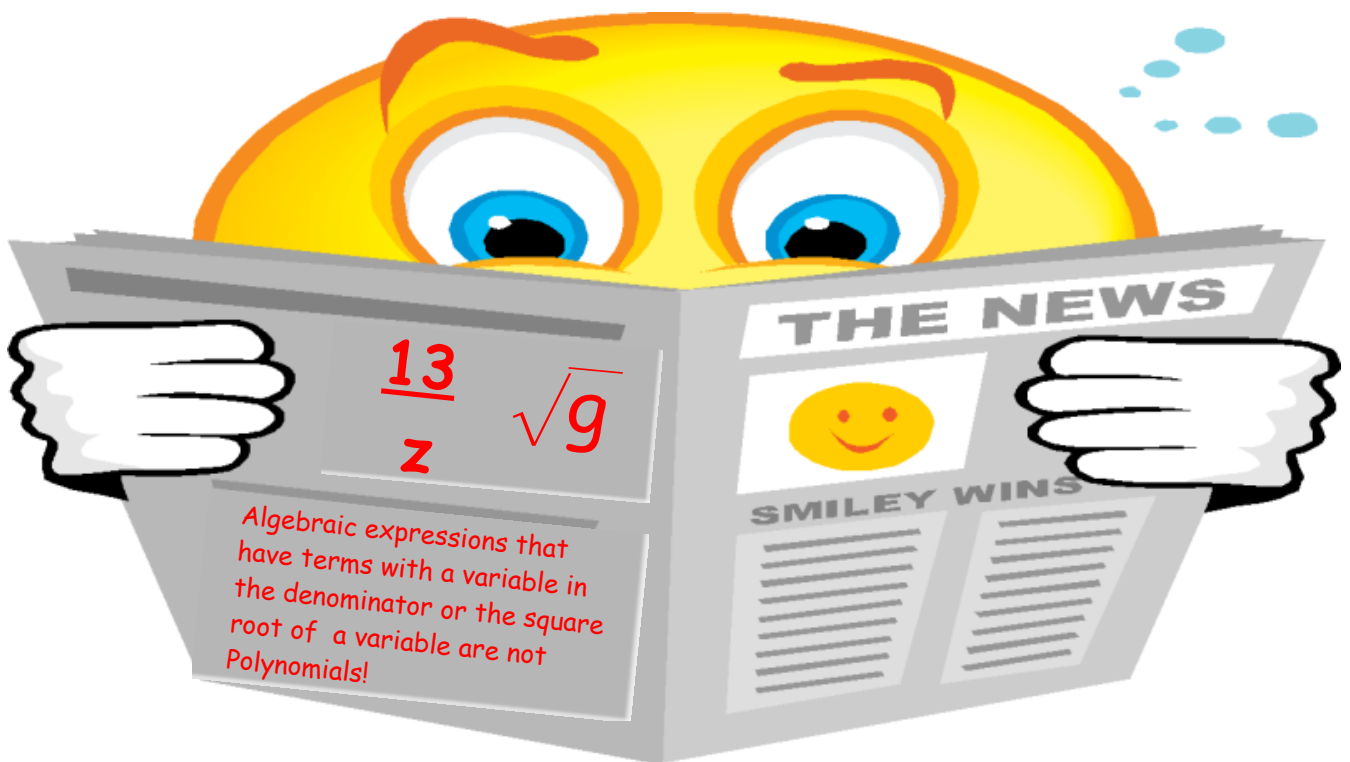
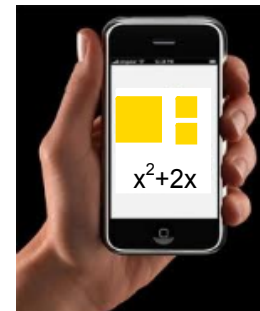# Modelling Polynomials

$3x+4$

$2x^2-4x+2$

$-x^2$ $-x$ -1

x^2 x 1
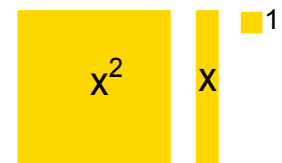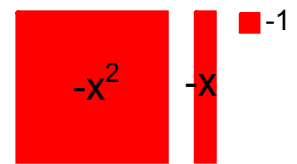
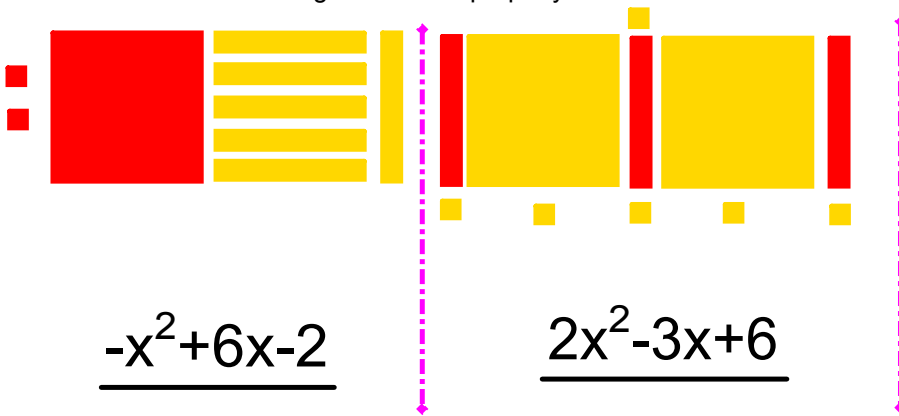x^2+2
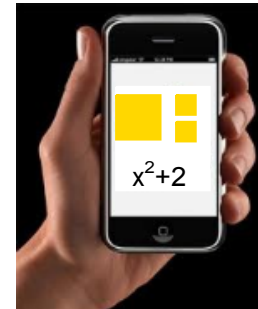
Modelling Polynomials

Write the algebraic expression that represents each model.

Don't forget to write it properly!

$-x^2$ $-x$ -1

x^2 x 1

$-x^2+6x-2$

$2x^2-3x+6$

x^2+2x

Check out pages 214 - 216