Curriculum Outcome

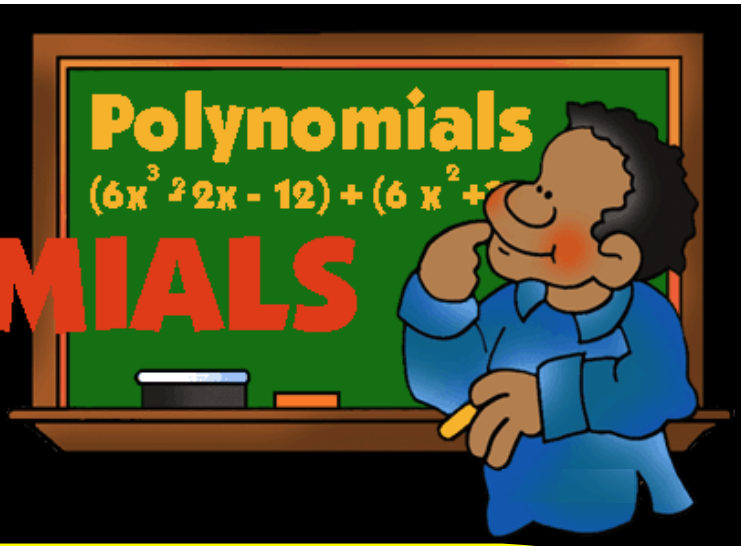
- [x] (PR 5)Demonstrate an understanding of polynomials (limited to of degree less than or equal to 2).
- [ ] (PR 6) Model, record and explain the operations of addition and subtraction of polynomial expressions, concretely, pictorially and symbolically (limited to polynomials of degree less than or equal to 2).
- [ ] (PR 7) Model, record and explain the operations of multiplication and division of polynomial expressions (limited to polynomials of degree less than or equal to 2) by monomials, concretely, pictorially and symbolically.

Student Friendly:

"Identify the variables, degree, number of terms and coefficients, including the constant term, of a given simplified polynomial expression."

Chapter 5

POLYNOMIALS



A **polynomial** is one term or the sum of terms who's variables have whole number exponents

$$5x^2 + 1$$

Polynomials

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

Monomials...

Monomials are polynomials with ONE term.

Example 14

Example x

Example $11y^2$

Ellen's Monologue

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

→ no addition or subtraction

Binomials...

Binomials are polynomials with TWO terms.

$7x + 3$

Example

$12y - x$

Example

$13x^2 + x$

Example

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

Trinomials...

Trinomials are polynomials with THREE terms.

Example

$-6x + 7y - 2$

$7x^2 + 8x + 7$

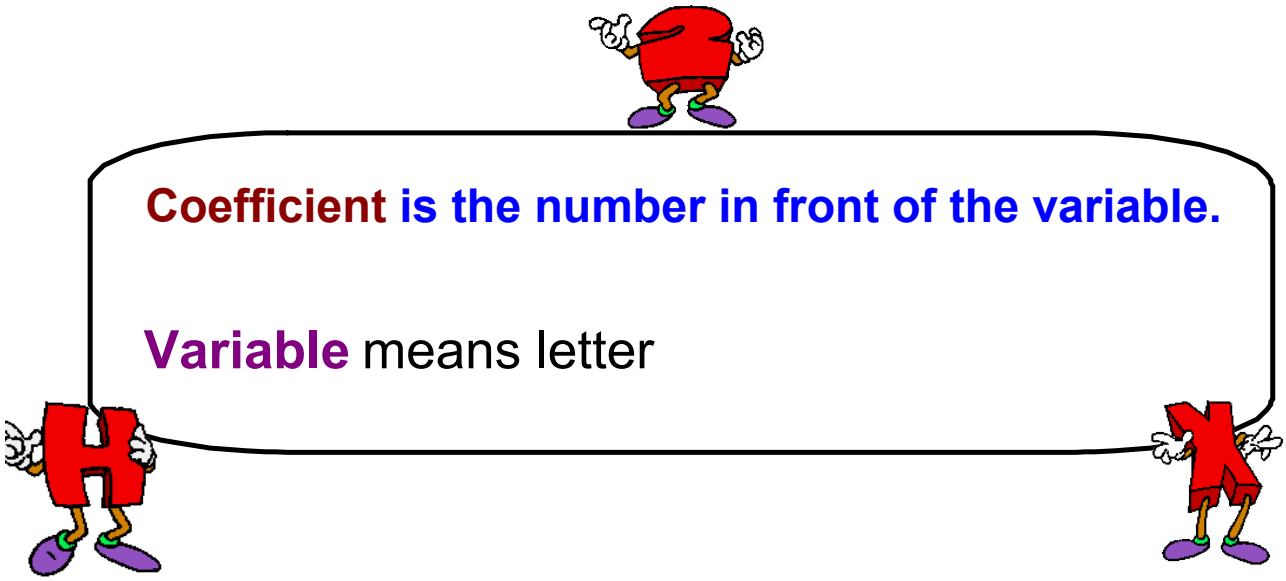
Example

$8 + 5m - 7m^2$

Example

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

Sort the following polynomials into the above categories:



Coefficient is the number in front of the variable.

Variable means letter

Example : 15x

Coefficient is 15

Variable is x

Example : -2y + 3r

Coefficients is -2 , 3

Variables is y, r

Degree of a Polynomial

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

Example: $5x-3x^2+7$

Degree: 2

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

This polynomial has a degree of 8, because the highest exponent is 8.

The term "+9" has a degree of 0, because there is no variable with it.

A number all by itself is known as a "constant", because this term will never change in value.

$$2x^5 - 4x^6 + 3$$

Coefficients: 2 and -4

Variable: x

Constant: 3

Degree: 6

Polynomials are written in descending order.

Each term is written from the highest degree to the lowest.

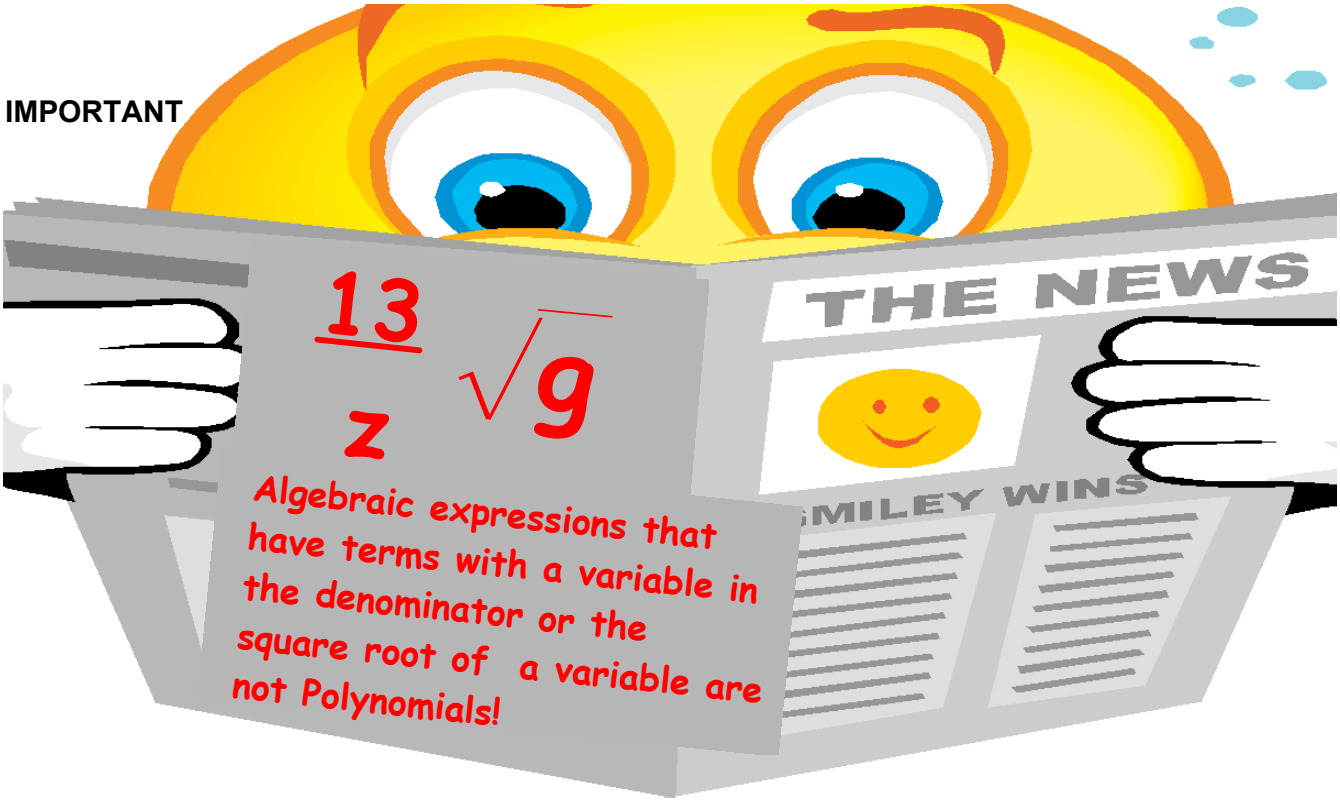
example:

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

will be written as...

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

IMPORTANT

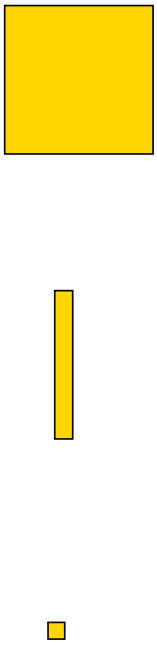


Which are polynomials?

1) $\sqrt{x}$ 2) $\frac{3}{4}y$ 3) $x^2 + 1$ 4) $\frac{3}{t}$

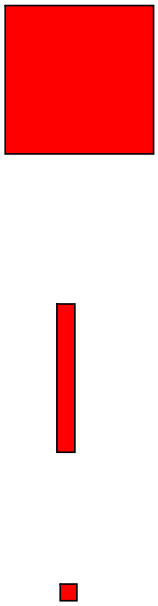
1)	2)	3)	4)
Not a Polynomial	Polynomial	Polynomial	Not a Polynomial

Unshaded



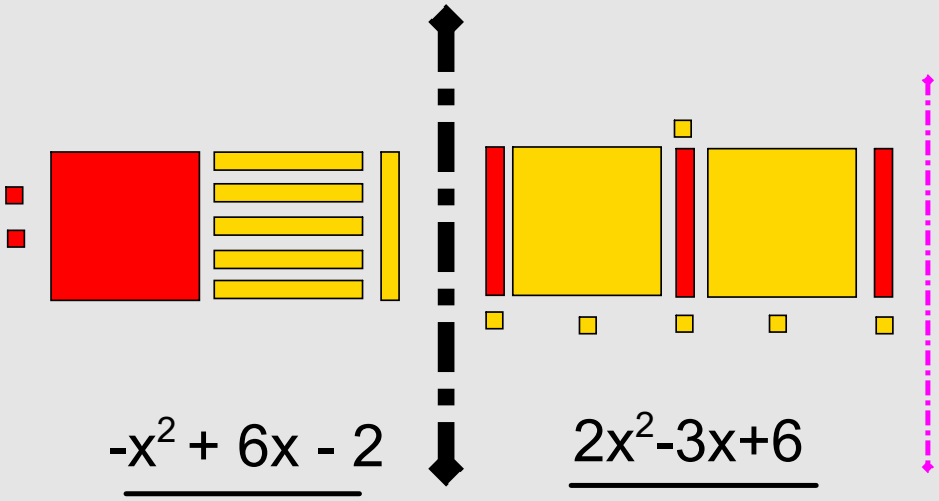
Area

Shaded

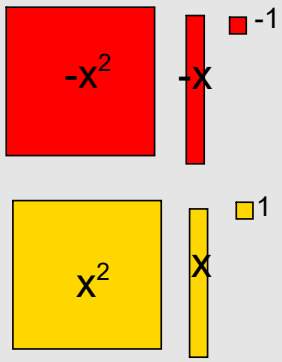


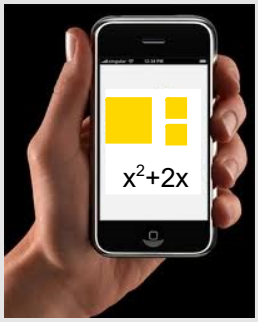
Modelling Polynomials

Write the algebraic expression that represents each model.
Don't forget to write it properly!



$-x^2 + 6x - 2$





$2x^2-3x+6$

Modelling Polynomials

Write the algebraic expression that represents each model.

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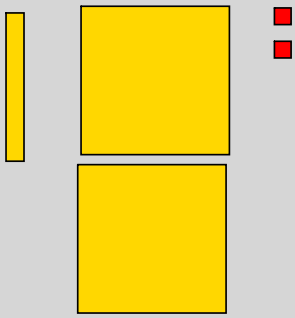
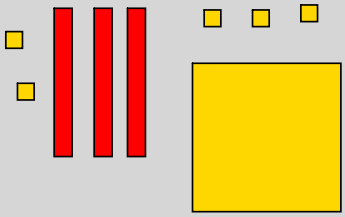
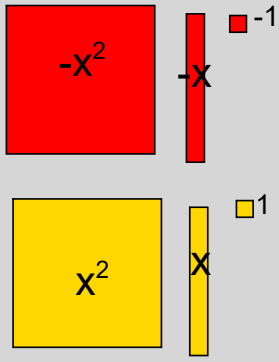
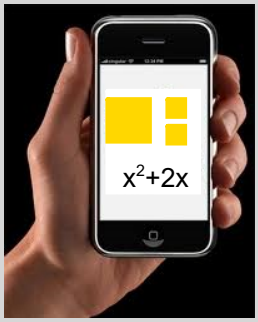


$2x^2 + x - 2$



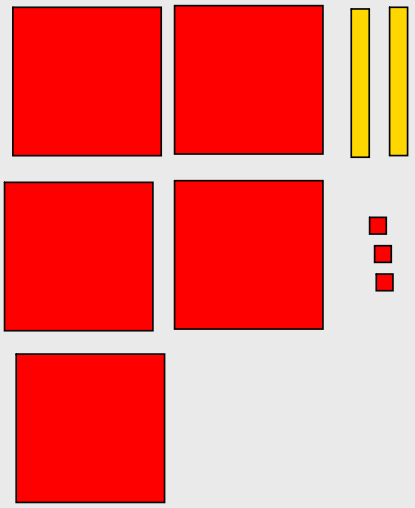
$x^2 - 3x + 5$



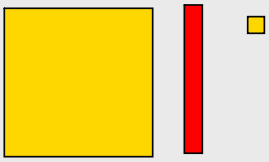


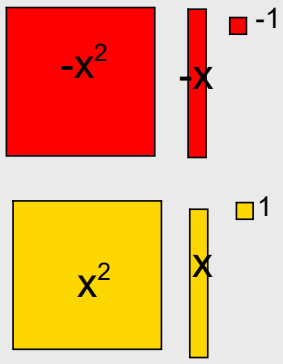
Modelling Polynomials

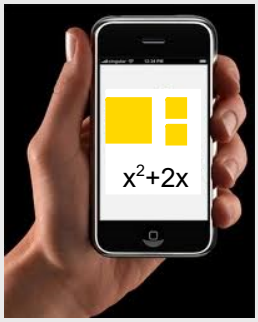
$-5x^2 + 2x - 3$



$x^2 - x + 1$







Review

Terms with polynomials

Monomial: one term

Binomial: two terms

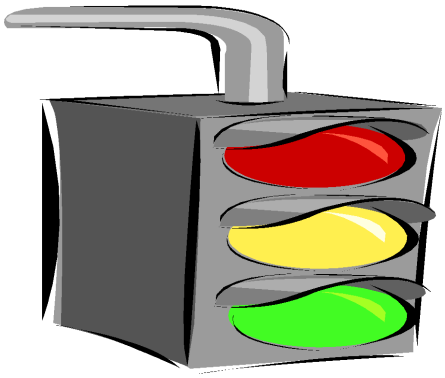
Trinomials: three terms

Variables: Letters

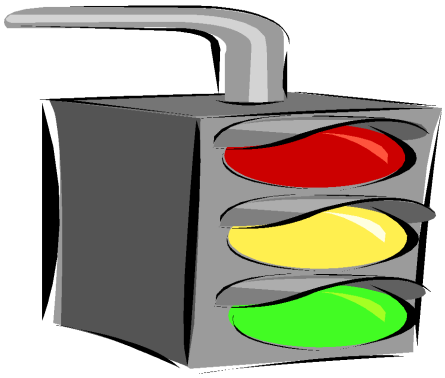
Coefficients: Numbers out in front of letters

Constant: the number all by itself

Degree: the highest exponent on a variable



Now it is time for Home Learning



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QUESTIONS

4, 5, 6, 7
8 (hint write all in descending order)
9 (set up a chart)
10
11 abc
12 (Sketch the tiles and put expression beside it)
13 adeh (Sketch the tiles and put expression beside it)
14 ac