ALGEBRA: Using letters (called variables) to represent unknown numbers

POLYNOMIAL: An expression that can include one or more terms.
Each term CAN include variables, exponents, coefficients and constants

TERM: a number, a letter or a product of numbers/letters. Terms are separated by + or —
-

CONSTANTS: a number by itself

VARIABLES : letters to represent numbers

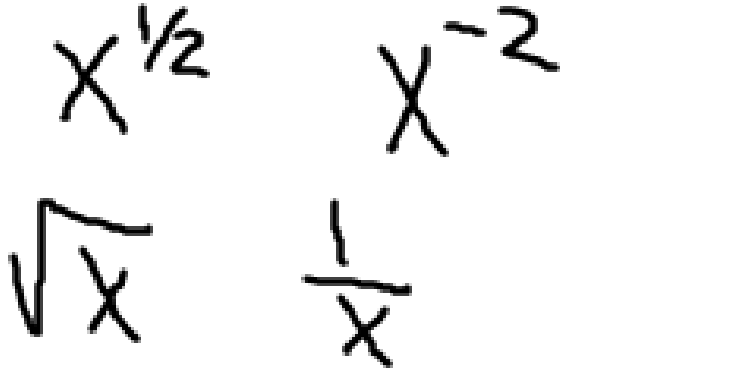
EXPONENTS: in polynomials a variables exponent must be a whole number

COEFFICIENTS: the number multiplied by a variable

Examples of polynomials:

- $x^2 + x - 3$
- $-2x^2 - 3$
- $2x^2 + 3x$
- $-2x^2 - 3x + 1$
- $-3x + 3$
- 4

Examples that are NOT ALLOWED IN POLYNOMIALS



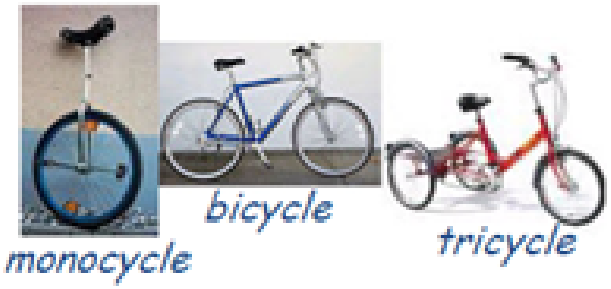
POLYNOMIAL	#OF TERMS	VARIABLE	COEFFICIENTS	CONSTANT
$3x^2 - 2x + 5.$	3	x	3 and -2	5
$7x+4$	2	x	7	4
6	1	NONE	NONE	6
$3x^2+2x$	2	x	3 and 2	0

one term → two terms

We use MONOMIAL, BINOMIAL AND TRINOMIAL to describe how many terms a simplified expression has

3 terms

How do you remember the names? Think cycles!



DEGREE of a polynomial is the largest exponent.

Examples:

x^2+x-3
trinomial | degree 2

$-2x^2-3$ binomial degree 2

$2x^3+3x$
binomial degree 3

$-3x+3$
binomial degree 1

$-2x^4-3x+1$
trinomial degree 4

$2x^2 + x^5 + 2x - 2$ should be $x^5 + 2x^2 + 2x - 2$

Polynomials should always be written from highest degree term to lowest degree term

Rearrange the following polynomials so that they are in order

$x + 5 - x^2$

$-x^2 + x + 5$

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

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

$2x^3 + 3x$

already good

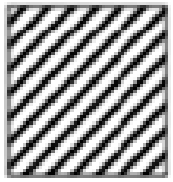
$8 - 2x^4 - 3x + x^2$

$-2x^4 + x^2 - 3x + 8$

Shaded tiles represent **positive** tiles

 = + 1

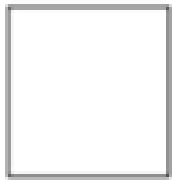
 = + x

 = + x^2

Non-shaded tiles represent **negative** tiles

 = −1

 = − x

 = − x^2

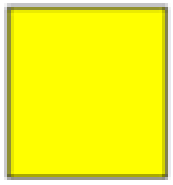
Colors can also be used to represent a tile.

IN YOUR TEXTBOOK:

Yellow is Positive

 = + 1

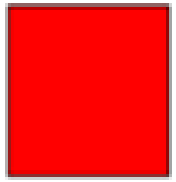
 = + x

 = + x^2

Red is Negative

 = −1

 = − x

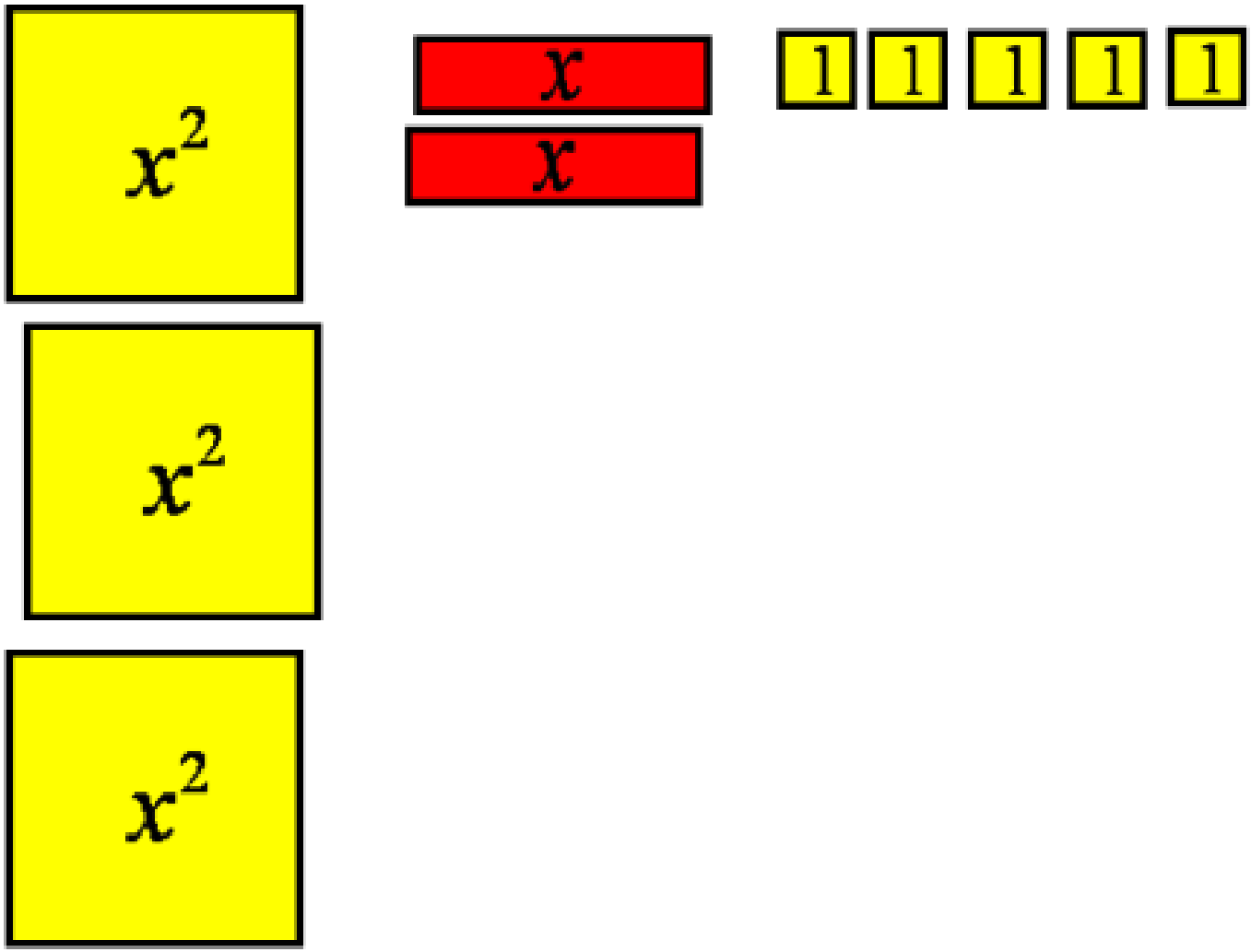
 = − x^2

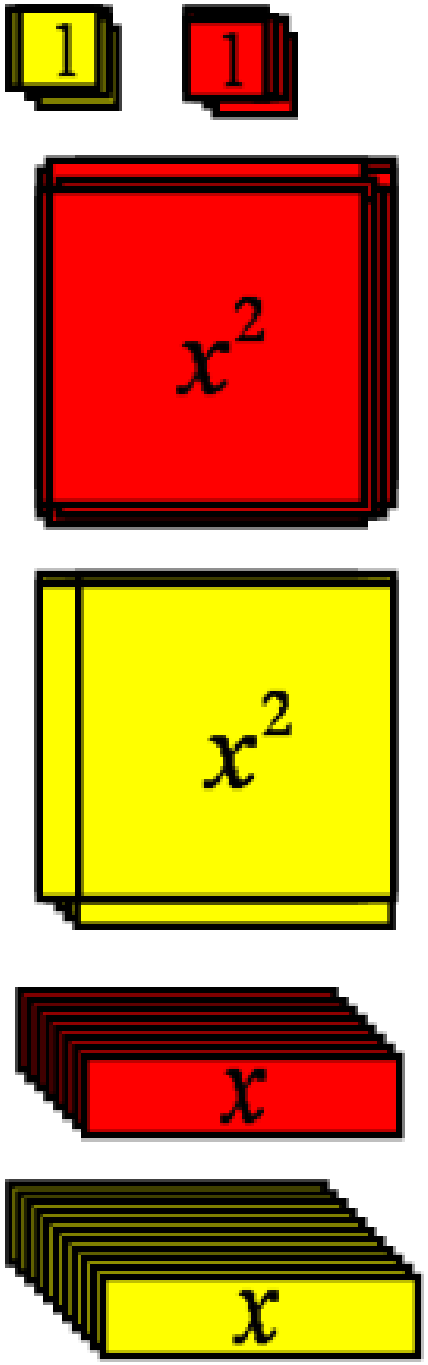
$3x^2 - 2x + 5$

three positive x^2 tiles

two negative x tiles

five positive 1 tiles.





$x^2 + 3x - 6$