Chapter 5: Polynomials

Section 5.1: Modeling Polynomials

Key Terms:

- Polynomial
- Term
- Coefficient
- Degree
- Constant Term

- Monomial
- Binomial
- Trinomial

- Like Terms

* We can use algebra tiles to model an expression.

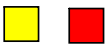
 represents +1

 represents -1

 represents x

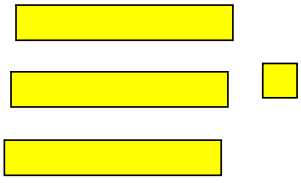
 represents -x

Note:

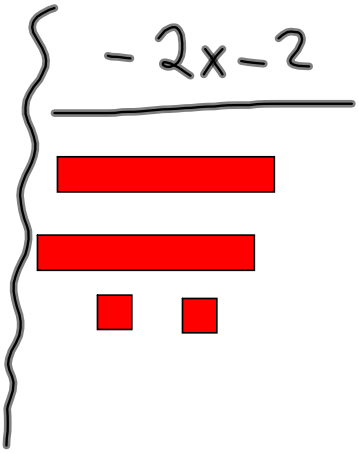

+1 -1 } This represents a zero pair

Example: Represent the following polynomials using tiles:

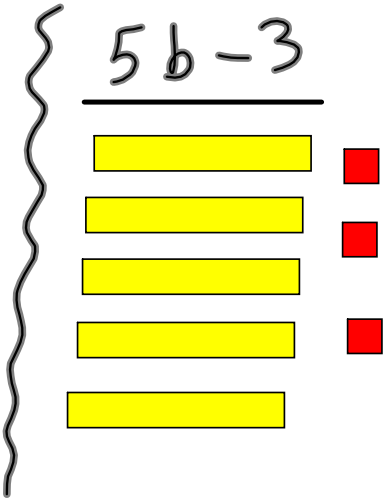
$3x+1$



$-2x-2$

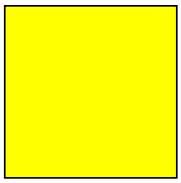


$5b-3$

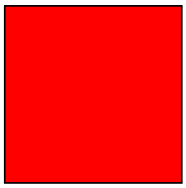


For expressions containing x^2 or y^2 or t^2...

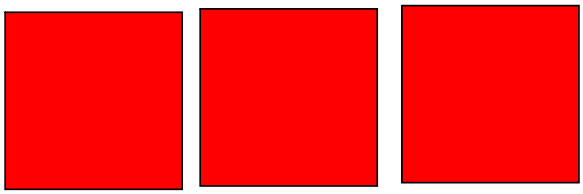
We use:



represents x^2

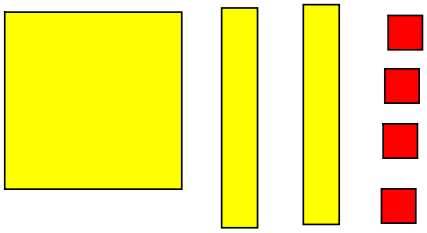


represents $-x^2$

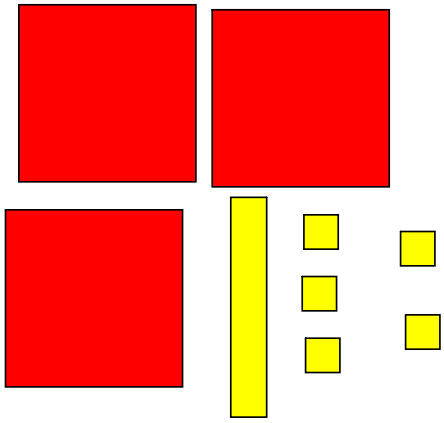
* Model $-3y^2$: 

Example: Use tiles to model the following polynomials

(A) x^2+2x-4



(B) $-3x^2+x+5$



$3x^2-2x+5$

Polynomial: Is an expression involving one or more terms whose variables have whole number exponents.

* $3x^2-2x+5$ has three terms.
* Terms are seperated by addition or subtraction sighs

∴ $3x^2$ is a term → degree = 2
$-2x$ is a term → degree = 1
5 is a term → degree = 0

Note: $3x^2-2x+5$ has a degree of 2 since 2 is the highest exponent in the polynomial

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What is the degree of the following polynomials:

(A) $4x^3-5x+1$ D = 3

(B) $12w^4+5$ D = 4

(C) $5+6t^2-7t^8$ D = 8

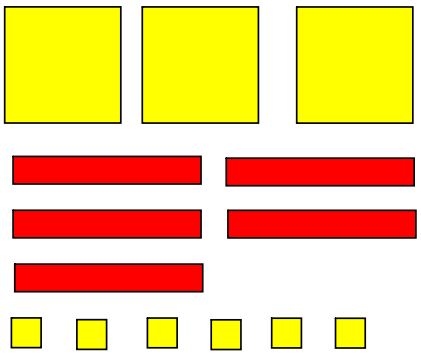
Types of Polynomials depend on the # of terms:

Type of Polynomial	Number of Terms	Examples	Types of Tiles
Monomial	1	$2w^2$ $-5w$ $\frac{1}{2}$	Has only one type of tile.
Binomial	2	x^2+3 $2a-1$ $-10x+5x^2$	Has two different types of tiles
Trinomial	3	$-c^2+c-1$ $5+7x^2+x$ $-10w-9-7w^2$	Has three different types of tiles

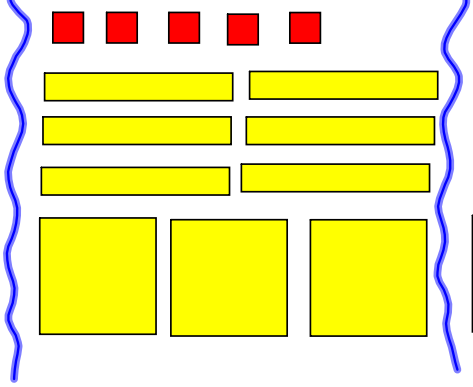
Question: Which of these polynomials are equivalent?

Note: Model each polynomial. If two models use the same tiles, their polynomials are equivalent.

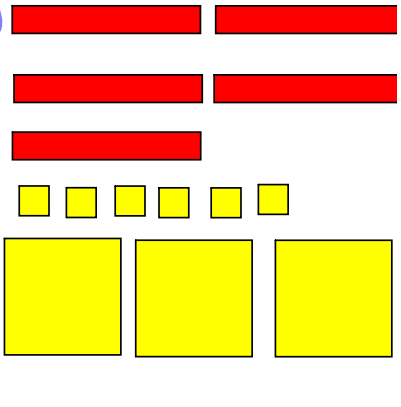
(A) $3x^2-5x+6$



(B) $-5+6r+3r^2$



(C) $-5m+6+3m^2$



∴ Since Model A & C have the same tiles their polynomials are equivalent.