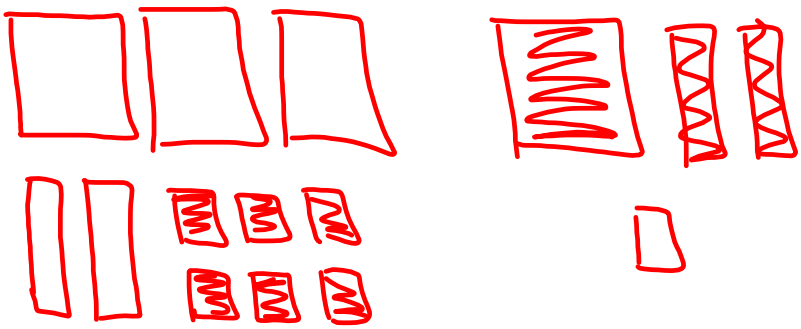
Section 5.3 - Adding Polynomials

Example 1: Adding polynomials with algebra tiles:

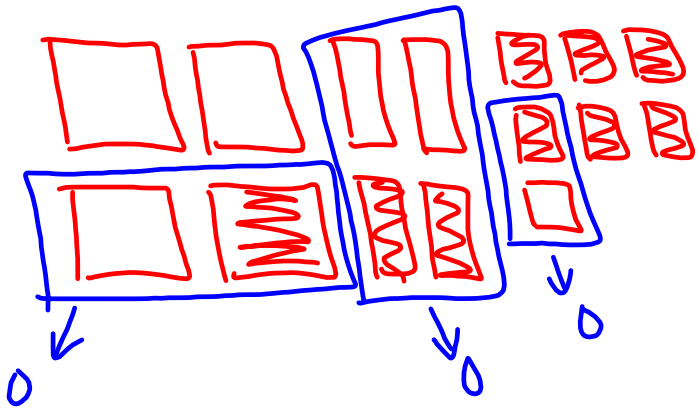
$$(3r^2+2r-6)+(-r^2-2r+1)$$

Solution:

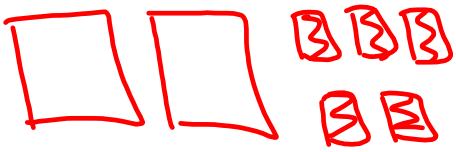
model each polynomial



group like tiles and remove zero pairs



The remaining tiles:



they represent: $2r^2-5$

The addition sentence:

$$(3r^2+2r-6)+(-r^2-2r+1)=2r^2-5$$

*we do not have to use algebra tiles to add polynomials.

* to add polynomials without tiles:

→ remove the brackets
→ add the coefficients of like terms

Example @: adding polynomials symbolically

a) $(3x^2+5x-6)+(2x^2-3x+4)$

Solution: $3x^2+5x-6+2x^2-3x+4$ remove brackets

$= 3x^2+2x^2+5x-3x-6+4$ group like terms

$= 5x^2+2x-2$ add coefficients of like terms

b) $(-x^2+11x-3)+(4x^2+5)$

$= -x^2+4x^2+11x-3+5$

$= 3x^2+11x+2$

c) $(b^2+6b-5ab+3)+(-2b^2+3-8ab)$

$= b^2-2b^2+6b-5ab-8ab+3+3$

$= -b^2+6b-13ab+6$

*we can also add polynomials by aligning like terms vertically.

Example ③: adding polynomials vertically

a) $(2m+9)+(3m^2+m-14)$

$$\begin{array}{r} 2m+9 \\ +\ 3m^2+m-14 \\ \hline 3m^2+3m-5 \end{array}$$

b) $(-9x^2+6x+5)+(10x^2+4x+2)$

$$\begin{array}{r} -9x^2+6x+5 \\ +\ 10x^2+4x+2 \\ \hline x^2+10x+7 \end{array}$$

Complete: pg 228-230

#'s 3, 5, 6, 8, 9, 10, 11 a.d, 12, 14