6.4 Adding Polynomials

Review: Identifying Parts of Polynomials

Ex: 1) $2x^2 + 5x - 3$
  a) Number of terms: 3 $\rightarrow 2x^2, 5x, -3$
  b) Degree: 2 $\rightarrow$ highest power on a variable in a term
  c) Variable(s): x^2, x $\rightarrow$ seperate because they are not 'like terms'
  d) Coefficients: 2, 5 $\rightarrow 2x^2, 5x$
  e) Constant: 3 $\rightarrow$ only term without a variable.

Ex: 2) Which of the following are polynomials?
  a) $-5k^2 - 2$ - Yes
  b) $5 - k + j^2$ - Yes (2 variables = a -ok!)
  c) $\frac{-5}{k} - 2$ } No, can't have variables in the denominator.
  d) $\frac{1}{x^2 + 3x}$

Ex: 3) Simplify $2x - 3x^2 + 5 - 4x + 6x^2$ $\rightarrow$ collect like terms!

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

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

Adding Polynomials:

Ex: 1) Simplify $(-2x^2 + 4x - 3) + (2x^2 - 4x - 1)$ Steps:

$= -2x^2 + 4x - 3 + 2x^2 - 4x - 1$ ① Rewrite without brackets

$= -2x^2 + 2x^2 + 4x - 4x - 3 - 1$ ② Group 'like terms' and rewrite.

$= 0x^2 + 0x - 4$ ③ Add/subtract like terms.

$= -4$ ④ Write your answer in its simplest form.
  ex., $1x^2 = x^2$; $1x = x$, $-1x = -x$
  • $0x + 3 = 3$; $0x - 3 = -3$

Ex: 2) Simplify:

a) $(x^2 + 3x) + (2x^2 + 7x + 6)$

① $= x^2 + 3x + 2x^2 + 7x + 6$

② $= x^2 + 2x^2 + 3x + 7x + 6$

③ $= 3x^2 + 10x + 6$ } cannot simplify further.

④ $= 3x^2 + 10x + 6$

b) $(2x^2 + xy + 1) + (x^2 - 2xy - 5)$

① $2x^2 + xy + 1 + x^2 - 2xy - 5$
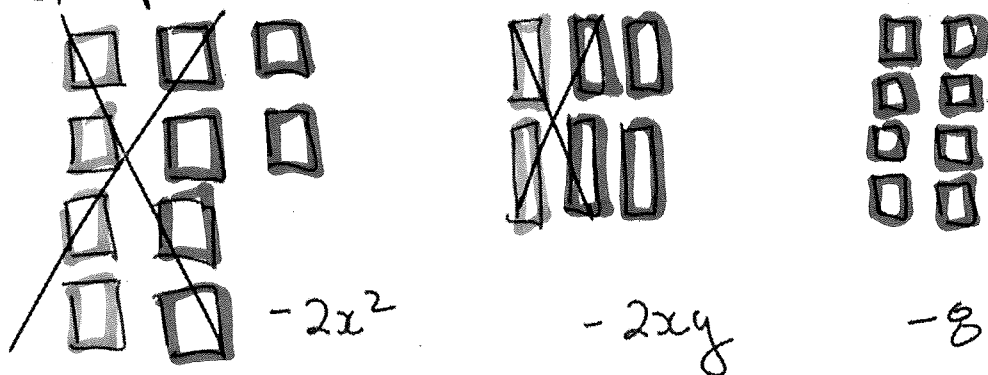
② $2x^2 + x^2 + xy - 2xy + 1 - 5$

③ $3x^2 - 1xy - 4$

④ $3x^2 - xy - 4$

Ex:3) Simplify $(4x^2 + 2xy - 8) + (-6x^2 - 4xy)$ using Algebra Tiles!!

① Use algebra tiles to represent the 2 polynomials:

$+4x^2$ $+2xy$ -8 $-6x^2$ $-4xy$

■ = positi

■ = negati

② Group similar shapes. Pairs of positive & negative cancel out.

$-2x^2$ $-2xy$ -8

③ Write the remaining tiles as the answer.

$-2x^2 - 2xy - 8$

Homework: pg. 294 #2, 5, 6, 7-9, 11, 13 and worksheet