6.3 Gathering Like Terms

Definitions:

- Like terms – terms whose variables (and their exponents) are the same.

  Ex: $7x$ & $2x$ are like terms because the variables are both x.
  But $7x$ & $7x^2$ are NOT like terms.

When we add or subtract like terms, this is also called simplifying. or collecting like terms

Ex: 1) Simplify:

Steps:
① Identify like terms.
② Rewrite polynomial so like terms are next to each other.
③ Add or subtract like terms!

a) $3x^2 + 2x + 4x^2 + x$

$(3x^2+4x^2)(+2x+x)$

$= 7x^2 + 3x$

b) $5x^3 + 3x^2 + 2y^2 - 3x^3 + 6x^2 - 3y^3$

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

$= 2x^3 + 9x^2 - 8y^3 + 2y^2$

c) $2n - 5n^2 - 5n - 3n^2$

$=(-5n^2-3n^2)(+2n-5n)$

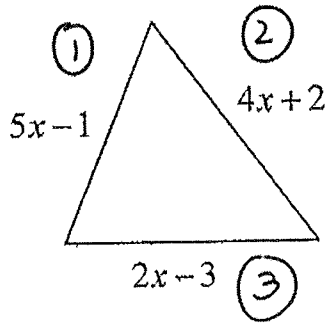
$= -8n^2 - 3n$

d) $2x^2y - 3xy + 4x^2y + 5xy$

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

$= 6x^2y + 2xy$

Ex: 2) Express the perimeter as a simplified expression.



$P = s_1 + s_2 + s_3$

$= 5x-1 + 4x+2 + 2x-3$

$= (5x + 4x + 2x)(-1 + 2 - 3)$

$= 11x - 2$

Homework: pg. 288 #2, 5-8, 12, 14a