Math 10 Name: _____

3.7 Multiplying Polynomials (II)

Ex.1) Expand and simplify:

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

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

$= -2x^4+4x^3+10x^2+3x^3-6x^2-15x+4x^2-8x-20$

$= \boxed{-2x^4+7x^3+8x^2-23x-20}$

b) $(x+1)(x-5)(2x+3)$

* multiply 2 together, then multiply the answer by the last one.

$=(x+1)(2x^2+3x-10x-15)$

$=(x+1)(2x^2-7x-15)$

$= x(2x^2-7x-15)+1(2x^2-7x-15)$

$= 2x^3-7x^2-15x+2x^2-7x-15$

$= \boxed{2x^3-5x^2-22x-15}$

c) $(4m+1)(3m-2)+2(2m-1)(-3m+4)$

$= 12m^2 - 8m + 3m - 2 + 2(-6m^2 + 8m + 3m - 4)$

$= 12m^2 - 5m - 2 + 2(-6m^2 + 11m - 4)$

$= 12m^2 - 5m - 2 - 12m^2 + 22m - 8$

$= \boxed{17m - 10}$

d) $(6x+y-2)(2x-3)-(4x-3y)^2$

$(4x-3y)(4x-3y)$

$= 6x(2x-3) + y(2x-3) - 2(2x-3) - (4x-3y)(4x-3y)$

$= 12x^2 - 18x + 2xy - 3y - 4x + 6 - (16x^2 - 12xy - 12xy + 9y^2)$

$= 12x^2 - 22x + 2xy - 3y + 6 - (16x^2 - 24xy + 9y^2)$

$= 12x^2 - 22x + 2xy - 3y + 6 - 16x^2 + 24xy - 9y^2$

$= \boxed{-4x^2 - 22x + 26xy - 3y + 6 - 9y^2}$

better answer: $-4x^2 - 9y^2 + 26xy - 22x - 3y + 6$ in alphabetical order from highest to lowest order of exponents

Assignment: p.186 #10, 11, 13-15