Math 10C

Polynomial Multiplying

Name _____

Date _____

Skills:

- **Multiply numbers.**

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

- **Algebra Examples – monomial x binomial, binomial x binomial, binomial x trinomial, number x polynomial, squares x squares, add & subtract products.**
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A. Find the following products

Multiply using the distributive property or rectangle multiplying.

a) $(3a+4)(2a-3)$

$3a(2a-3)+4(2a-3)$

$6a^2-9a+8a-12$

$6a^2-a-12$

b) $(5x+4y+2)(2x+3y+4)$

$10x^2+15xy++20x+8xy+12y^2+16y+4x+6y+8$

$10x^2+23xy+24x+12y^2+22y+8$

c) $5(4m-3)^2$

$5(4m-3)(4m-3)$

$16m^2 - 12m - 12m + 9$

$5(16m^2 - 24m + 9)$

$80m^2 - 120m + 45$

OR

$5(4m-3)(4m-3)$

$(20m-15)(4m-3)$

$80m^2 - 60m - 60m + 45$

$80m^2 - 120m + 45$

B. Try the first example… wait to confirm you did it right… then try the others…

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

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

$12x^2+4x+6x+2 + 10x^2-4x-15x+6$

$12x^2+10x+2 + 10x^2-19x+6$

$22x^2-9x+8$

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

$(4x+10)(x+4) - [3(x+5)(x+5)]$ ← subtracting the entire term

$4x(x+4)+10(x+4) - [3x+15)(x+5)$

$4x^2+16x+10x+40 - [3x(x+5)+15(x+5)$

$4x^2+16x+10x+40 - [3x^2+15x+15x+75]$

$4x^2+26x+40 - [3x^2+30x+75]$ ← multiply the negative through (subtraction sign)

$4x^2+26x+40 - 3x^2-30x-75$

$x^2-4x-35$

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

$(x+2)(x+2) + (2x+3)(2x+3)$

$x^2+4x+4 + 4x^2+12x+9$

$5x^2+16x+13$

d) $(5x-1)^2-(x+3)^2$

$(5x-1)(5x-1) - [(x+3)(x+3)]$ ← subtracting the entire term

$25x^2-10x+1 - 1[x^2+6x+9)$ ← multiply the negative through (subtraction sign)

$25x^2-10x+1-x^2-6x-9$

$24x^2-16x-8$