Name_____ Date_____ Period_____

MULTIPLYING POLYNOMIAL EXPRESSIONS WORKSHEET

Example 1: $2x(3x-4)$ **Use the Distributive property**: $(2x\cdot 3x)(2x\cdot -4)=6x^2-8x$

Example 2: $(2x+3)(4x-7)$ **Use the FOIL method:** FOIL stand for First, Outside, Inside, Last.

First: $(2x)(4x)=8x^2$ Outside: $(2x)(-7)=-14x$ Inside: $(4x)(3)=12x$ Last: $(3)(-7)=-21$

Combine like terms: $8x^2-14x+12x-21=8x^2-2x-21$

Multiply the polynomial expressions. Write your answers in simplest form.

1. $4m(3m-4)$
2. $(3xy)\left(9x^2\right)$
3. $-6a^2(4a^2-9a-7)$
4. $4z^2(2z^3-5z^2+4z-8)$
5. $2x(3x^3-4x^2-5x+3)$
6. $19x-2(4x+5)-18$
7. $3(x^3+4x^2)-2x(x-7)+5x$
8. $4(3d^2+5d)-d(d^2-7d+12)$
9. $-5xy^3(-3x^3+7y-2xy)$
10. $(3x+1)(x+2)$
11. $(n-8)(2n+9)$
12. $(5b-3)(2b-9)$
13. $(3x-7)(4x+3)$
14. $(7x+3)(5x-8)$
15. $(8x+6)(7x-8)$
16. $(6x-7)(4x-2)$
17. $(3a-b)(2a+7b)$
18. $(3x^2+4x)(2x-1)$

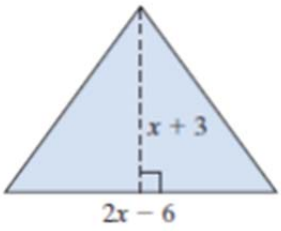
19. Jana has finished weaving a blanket. She made the length of the blanket 1 foot greater than twice its width, because otherwise her toes get cold.

a) Find the polynomial expression that represents the perimeter of the blanket.

b) Find the polynomial expression that represents the area of the blanket.

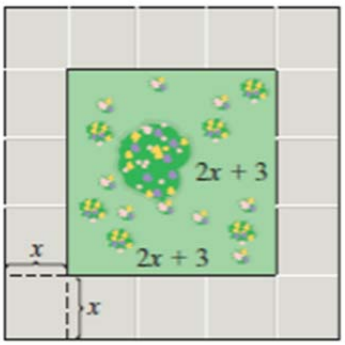
c) If the width of the blanket is 4 feet, what is the area of the blanket?

20. Write an expression for the area of the triangle:



21. A square garden is surrounded by a walkway of width, *x*.

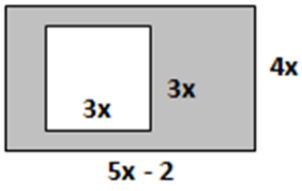
a) Write an expression for the area of the garden.



b) Write an expression for the area of the walkway and the garden.

22. Find the area of the shaded regions below. (Big Shape – Little Shape ("hole") = Shaded Region) Put your answer in simplest form.

a.



b.