Name KEY Class _____ Date _____

8-3 Practice

Form K

Multiplying Binomials

Simplify each product.

1. $(b-2)(b+1)$

$= b^2 + b - 2b - 2$

$= b^2 - b - 2$

2. $(3n+1)(n-8)$

$= 3n^2 - 24n + n - 8$

$= 3n^2 - 23n - 8$

3. $(3y-7)(y-5)$

$= 3y^2 - 15y - 7y + 35$

$= 3y^2 - 22y + 35$

4. $(m-2)(3m+5)$

$= 3m^2 + 5m - 6m - 10$

$= 3m^2 - m - 10$

5. $(3c+13)(13c+3)$

$= 39c^2 + 9c + 169c + 39$

$= 39c^2 + 178c + 39$

6. $(2m+7)(6m-1)$

$= 12m^2 - 2m + 42m - 7$

$= 12m^2 + 40m - 7$

7. $(3z-4)(7z-5)$

$= 21z^2 - 15z - 28z + 20$

$= 21z^2 - 43z + 20$

8. $(7h+6)(7h-6)$

$= 49h^2 - 42h + 42h - 36$

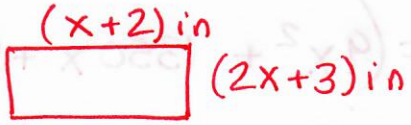
$= 49h^2 - 36$

9. $(p-5)(2p+5)$

$= 2p^2 + 5p - 10p - 25$

$= 2p^2 - 5p - 25$

10. A rectangle has a length of $(x + 2)$ in. and a width of $(2x + 3)$ in. Find an expression that represents the area of the rectangle. Write the expression in simplified form.



$A = (2x+3)(x+2)$

$A = 2x^2 + 4x + 3x + 6$

$A = (2x^2 + 7x + 6)\ in^2$

Simplify each product.

11. $(c+4)(c^2-3c+5)$

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

$= c^3-3c^2+5c+4c^2-12c+20$

$= c^3+c^2-7c+20$

12. $(p^2-2p+5)(p-7)$

$= p^2(p-7)-2p(p-7)+5(p-7)$

$= p^3-7p^2-2p^2+14p+5p-35$

$= p^3-9p^2+19p-35$

13. $(3x-8)(4x^2+2x+3)$

$= 3x(4x^2+2x+3)-8(4x^2+2x+3)$

$= 12x^3+6x^2+9x-32x^2-16x-24$

$= 12x^3-26x^2-7x-24$

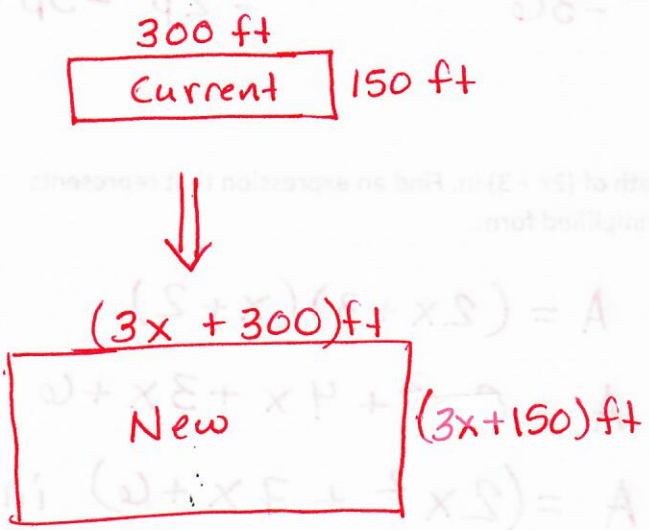
14. $(5m^2+3m-11)(6m-1)$

$= 5m^2(6m-1)+3m(6m-1)-11(6m-1)$

$= 30m^3-5m^2+18m^2-3m-66m+11$

$= 30m^3+13m^2-69m+11$

15. A community center is expanding the size of its rectangular meeting hall. The hall is currently 300 ft long and 150 ft wide. The center plans to expand both the length and the width of the meeting hall by $3x$ ft. What polynomial in standard form represents the area of the expanded meeting hall?
(HINT: Draw a picture and label the sides.)



New Area

$(3x+300)(3x+150)$

$= 9x^2+450x+900x+45000$

$= (9x^2+1350x+45000)\ ft^2$