Name _____ Class _____ Date _____

8-3 Practice

Form K

Multiplying Binomials

Simplify each product using the Distributive Property.

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

2. $(x + 6)(x + 5)$ $x^2 + 11x + 30$

3. $(3n + 1)(n - 8)$ $3n^2 - 23n - 8$

4. $(2t - 7)(t - 5)$ $2t^2 - 17t + 35$

5. $(y + 3)(y + 7)$ $y^2 + 10y + 21$

6. $(b - 6)(b + 3)$ $b^2 - 3b - 18$

Simplify each product using a table.

7. $(x + 1)(x - 11)$
   $x^2 - 10x - 11$

8. $(h - 2)(3h + 5)$
   $3h^2 - h - 10$

9. $(8w - 3)(4w - 7)$
   $32w^2 - 68w + 21$

10. $(3c + 13)(13c + 3)$
    $39c^2 + 178c + 39$

11. $(3a + 2)(a - 2)$
    $3a^2 - 4a - 4$

12. $(t + 7)(2t - 4)$
    $2t^2 + 10t - 28$

13. $(3q^2 + 6)(2q - 5)$
    $6q^3 - 15q^2 + 12q - 30$

14. $(x + 6)(x - 7)$
    $x^2 - x - 42$

15. $(p - 10)(2p + 5)$
    $2p^2 - 15p - 50$

16. $(j - 12)(j - 11)$
    $j^2 - 23j + 132$

17. $(3z - 4)(7z - 5)$
    $21z^2 - 43z + 20$

18. $(2m + 11)(6m - 1)$
    $12m^2 + 64m - 11$

19. $(7h + 6)(7h - 6)$
    $49h^2 - 36$

20. $(-3z + 7)(4z - 8)$
    $-12z^2 + 52z - 56$

21. $(-3t + 5)(-3t - 2)$
    $9t^2 - 9t - 10$

8-3 Practice (continued) Form K

Multiplying Binomials

22. The radius of a circle is $(7x + 3)$ cm. Write an expression to represent the area of the circle in simplified form. $49\pi x^2 + 42\pi x + 9\pi$ cm^2

23. 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. $2x^2 + 7x + 6$ in.^{2}

Simplify each product using the FOIL method.

24. $(x + 4)(x + 6)$
$x^2 + 10x + 24$

25. $(a - 5)(2a - 6)$
$2a^2 - 16a + 30$

26. $(6d^2 + 4)(8d - 3)$
$48d^3 - 18d^2 + 32d - 12$

27. $(t - 4)(t - 9)$
$t^2 - 13t + 36$

28. $(n + 8)(2n - 7)$
$2n^2 + 9n - 56$

29. $(f - 7)(f + 3)$
$f^2 - 4f - 21$

Simplify each product.

30. $(c + 4)(c^2 - 3c + 5)$
$c^3 + c^2 - 7c + 20$

31. $(p^2 - 2p + 5)(p - 7)$
$p^3 - 9p^2 + 19p - 35$

32. $(4x^2 + 2x + 3)(3x - 8)$
$12x^3 - 26x^2 - 7x - 24$

33. $(5t^2 + 3t - 11)(6t - 1)$
$30t^3 + 13t^2 - 69t + 11$

34. 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?
$9x^2 + 1350x + 45{,}000$ ft^2

35. Open-Ended Write a cubic monomial and a fourth-degree trinomial. Then find their product and write it in standard form.
Answers may vary. Sample: $2x^3$ and $x^4 + 2x + 3$; $2x^7 + 4x^4 + 6x^3$