5.5   Binomial Products

MATHPOWER™ *Nine*, **pp. 193–194**

To expand a binomial product, use the distributive property.
Multiply each term in the first binomial by each term in the second
binomial. You can remember this method with the acronym FOIL,
which stands for First terms, Outside terms, Inside terms, and Last terms.

$$(2x + 1)(3x + 2) = 2x(3x + 2) + 1(3x + 2)$$
$$= 6x^2 + 4x + 3x + 2$$
$$= 6x^2 + 7x + 2$$

$$(2x + 1)(3x + 2) = (2x + 1)(3x + 2)$$

F   O   I   L
$$= 6x^2 + 4x + 3x + 2$$
$$= 6x^2 + 7x + 2$$

Express each area as a product and in expanded form. Let G represent green tiles and R represent red tiles.

1.

_____

_____

2.

_____

_____
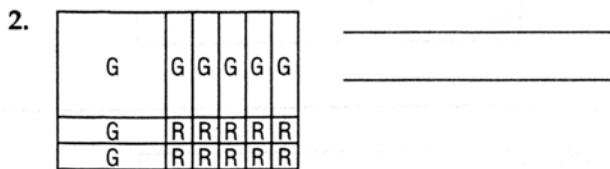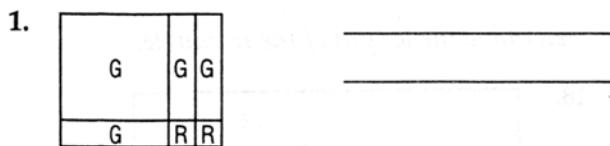
Expand.

3. $2(x + 4)$

_____

4. $y(2x - 3)$

_____

5. $2b(3b - 2)$

_____

6. $4a(2a^2 - 5)$

_____

Find the product.

7. $(a + 3)(a + 2)$ _____

8. $(2 + k)(3 + k)$ _____

9. $(x - 1)(x - 2)$ _____

10. $(c - 5)(c - 3)$ _____

11. $(2 - q)(3 - q)$ _____

12. $(y - 4)(y + 6)$ _____

13. $(t + 5)(t - 1)$ _____

14. $(3 - b)(4 + b)$ _____

Expand.

15. $(6v + 3)(v + 1)$ _____

16. $(5 + 2x)(2 + x)$ _____

17. $(y - 5)(2y - 2)$ _____

18. $(5 - 2n)(3 - n)$ _____

19. $(m + 4)(3m - 2)$ _____

20. $(4g - 3)(g + 4)$ _____

21. $(2y + 3)(3y + 2)$ _____

22. $(5h - 1)(2h - 3)$ _____

23. $(3 - 2s)(2 - 3s)$ _____

24. $(4 + 2p)(3 - 4p)$ _____

Multiply.

25. $(x + 0.4)(x - 2)$ _____

26. $(c - 1.5)(-c + 5)$ _____

27. $(d - 0.6)(3d - 1.2)$ _____

28. $(5s + 0.2)(2s + 0.3)$ _____

29. $3(x + 2)(x + 3)$ _____

30. $-2(y - 3)(-y + 2)$ _____

31. $0.2(x + 1)(x + 2)$ _____