Name _Key._

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.

G		G	G
G		R	R

_____

_____

2.

G		G	G	G	G	G
G		R	R	R	R	R
G		R	R	R	R	R

_____

_____
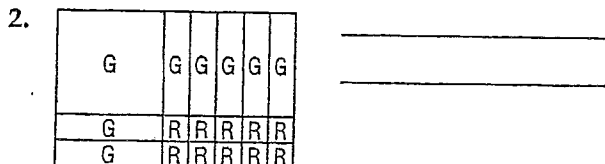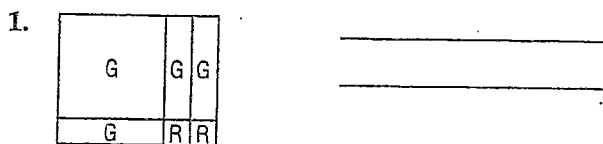
Expand.

3. $2(x + 4)$
$2x + 8$

4. $y(2x - 3)$
$2xy - 3y$

5. $2b(3b - 2)$
$6b^2 - 4$

6. $4a(2a^2 - 5)$
$8a^3 - 20$

Find the product.

7. $(a + 3)(a + 2)$ $a^2 + 5a + 6$

8. $(2 + k)(3 + k)$ $k^2 + 5k + 6$

9. $(x - 1)(x - 2)$ $x^2 - 3x + 2$

10. $(c - 5)(c - 3)$ $c^2 - 8c + 15$

11. $(2 - q)(3 - q)$ $q^2 - 5q + 6$

12. $(y - 4)(y + 6)$ $y^2 + 2y - 24$

13. $(t + 5)(t - 1)$ $t^2 + 4t - 5$

14. $(3 - b)(4 + b)$ $-b^2 - b + 12$

Expand.

15. $(6v + 3)(v + 1)$ $6v^2 + 9v + 3$

16. $(5 + 2x)(2 + x)$ $2x^2 + 9x + 10$

17. $(y - 5)(2y - 2)$ $2y^2 - 12y + 10$ (

18. $(5 - 2n)(3 - n)$ $2n^2 - 11n + 15$

19. $(m + 4)(3m - 2)$ $3m^2 + 10m - 8$

✱ 20. $(4g - 3)(g + 4)$ $4g^2 + 13g - 12$

21. $(2y + 3)(3y + 2)$ $6y^2 + 13y + 6$

22. $(5h - 1)(2h - 3)$ $10h^2 - 17h + 3$

23. $(3 - 2s)(2 - 3s)$ $6s^2 - 13s + 6$

24. $(4 + 2p)(3 - 4p)$ $-8p^2 - 10p + 12$

Multiply.

25. $(x + 0.4)(x - 2)$ $x^2 - 1.6x - 0.8$

26. $(c - 1.5)(-c + 5)$ $-c^2 + 6.5c - 7.5$

27. $(d - 0.6)(3d - 1.2)$ $3d^2 - 3d + 0.72$

28. $(5s + 0.2)(2s + 0.3)$ $10s^2 + 1.9s + 0.06$

29. $3(x + 2)(x + 3)$ $3x^2 + 15x + 18$

30. $-2(y - 3)(-y + 2)$ $2y^2 - 10y + 12$

31. $0.2(x + 1)(x + 2)$ $0.2x^2 + 0.6x + 0.4$