Name _____ Date _____

LESSON 8.3

Practice A

For use with the lesson "Find Special Products of Polynomials"

Find the missing term.

1. $(a - b)^2 = a^2 - \_?\_ + b^2$

2. $(m + n)^2 = m^2 + \_?\_ + n^2$

3. $(x - 1)^2 = x^2 - \_?\_ + 1$

4. $(x + 5)^2 = x^2 + \_?\_ + 25$

5. $(x - y)(x + y) = x^2 - \_?\_$

6. $(x - 3)(x + 3) = x^2 - \_?\_$

Match the product with its polynomial.

7. $(2x + 3)(2x - 3)$ **8.** $(2x + 3)^2$ **9.** $(2x - 3)^2$

A. $4x^2 + 12x + 9$ **B.** $4x^2 - 12x + 9$ **C.** $4x^2 - 9$

Find the product of the square of the binomial.

10. $(x + 4)^2$ **11.** $(m - 8)^2$ **12.** $(a + 10)^2$

13. $(p - 12)^2$ **14.** $(2y + 1)^2$ **15.** $(3y - 1)^2$

16. $(10r - 1)^2$ **17.** $(4n + 2)^2$ **18.** $(3c - 2)^2$

Find the product of the sum and difference.

19. $(z + 5)(z - 5)$ **20.** $(b - 2)(b + 2)$ **21.** $(n - 8)(n + 8)$

22. $(a + 10)(a - 10)$ **23.** $(2x + 1)(2x - 1)$ **24.** $(5m - 1)(5m + 1)$

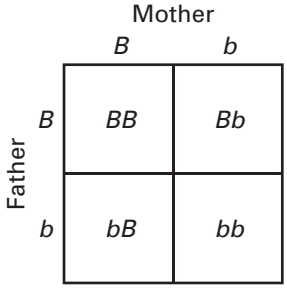
25. $(4d + 1)(4d - 1)$ **26.** $(3p + 2)(3p - 2)$ **27.** $(2r - 3)(2r + 3)$

***Describe* how you can use mental math to find the product.**

28. $13 \cdot 7$ **29.** $24 \cdot 36$ **30.** $51 \cdot 69$

31. Total Profit For 1995 through 2005, the number N of units (in thousands) produced by a manufacturing plant can be modeled by $N = 3t + 2$ and the profit per unit P (in dollars) can be modeled by $P = 3t - 2$ where t is the number of years since 1995. Write a polynomial that models the total profit T (in thousands of dollars).

32. Eye Color In humans, the brown eye gene B is dominant and the blue eye gene b is recessive. This means that humans whose eye genes are BB, Bb, or bB have brown eyes and those with bb have blue eyes. The Punnett square at the right shows the results of eye colors for children of parents who each have one B gene and one b gene.



a. Write a polynomial that models the possible gene combinations of a child.

b. What percent of the possible gene combinations results in a child with blue eyes?