

LESSON
8.3

Practice A

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

Find the missing term.

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|---|---|
| 1. $(a - b)^2 = a^2 - \underline{\quad?} + b^2$ | 2. $(m + n)^2 = m^2 + \underline{\quad?} + n^2$ |
| 3. $(x - 1)^2 = x^2 - \underline{\quad?} + 1$ | 4. $(x + 5)^2 = x^2 + \underline{\quad?} + 25$ |
| 5. $(x - y)(x + y) = x^2 - \underline{\quad?}$ | 6. $(x - 3)(x + 3) = x^2 - \underline{\quad?}$ |

Match the product with its polynomial.

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|-----------------------|---------------------|-----------------|
| 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.

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|-------------------|------------------|------------------|
| 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.

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|------------------------|------------------------|------------------------|
| 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.

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

		Mother	
		B	b
Father	B	BB	Bb
	b	bB	bb

- Write a polynomial that models the possible gene combinations of a child.
- What percent of the possible gene combinations results in a child with blue eyes?