Name _____   Date _____

LESSON
8.2 # Challenge Practice
For use with the lesson "Multiply Polynomials"

In Exercises 1–5, find the product and simplify.

1. $(x^3 + 2x)(x^4 + x^2)$

2. $(3y - y^3)(y^4 + y)$

3. $(2x^3 + 2y)(x^4 + 2y^3)$

4. $x^3(x^5 + 4x^3)(2x^4 + 3x^2)$

5. $(x^2 + 1)(x + 2)(x^2 + 2)$

In Exercises 6–10, simplify the expression and write the result as a polynomial in standard form.

6. $x(x^2 + 2x) - x^2(x + 2)$

7. $(x + 1)(x + 1) - (x - 1)(x - 1)$

8. $(x^2 + 1)(x^2 + 1) - (x^2 - 1)(x^2 - 1)$

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

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

In Exercises 11–13, use the following information.

A ship storage compartment is being designed to carry trailers, each of which has dimensions 50 feet long by 9 feet tall by 8 feet wide. It is decided that the storage container will have dimensions $50x + 150$ feet long by $9x$ tall by $8x + 16$ feet wide.

11. Write an expression for the volume of the storage compartment in terms of x.

12. Simplify the expression found in Exercise 11 and write it as a polynomial in standard form.

13. If x is 4, how many trailers will fit inside the storage compartment?

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LESSON 8.2

Algebra 1
Chapter Resource Book   **8-25**