Name _____ Class _____ Date _____

Chapter Test — Form B

Chapter 9

Write each polynomial in standard form. Then name each expression based on its degree and number of terms.

1. $-x^4 - x + 7$
2. $6x^3 + 3x^2 - 15$
3. $15x^5 - 45x^3 - 60x^4$
4. $40x^5 + 32x + 8x^6 - 24x^4$

Simplify. Write each answer in standard form.

5. $(x^2 + x + 3) + (x^2 - 3x - 4)$
6. $(-3x^2 - x + 4) + (2x^2 + 4x - 1)$
7. $(9x^2 + 12x + 6) - (8x + 9 - 3x^2)$
8. $(2x^2 - 18) - (4x^2 + 5x^3 - 12)$
9. **Open-Ended** Write a trinomial with degree 4.

Simplify each product. Write in standard form.

10. $3x(2x + 8 - x^2)$
11. $-y(6y^2 + y)$
12. $6y(8 - 2y + 9y^3)$
13. $7y(5y^5 + 9y^3)$
14. $4x(2x^2 + 3x + 7)$
15. $(y + 5)(y + 6)$
16. $(a + 5)(a - 2)$
17. $(y - 2)(4y + 7)$
18. $(3x - 5)(x - 8)$
19. $(x + 3)(3x^2 - x + 7)$
20. $(x^2 - 5x + 6)(4 - x)$
21. $(9x - 5)(4x + 3)$

Write the GCF of the terms of each polynomial.

22. $-10x^2 + 5x^5 - 7x^3$
23. $8x^5 + 12x^4 - 20x^3$
24. $15y^3 - 18y^6 - 6y + 9y^2$
25. $-25y^3 + 20y + 15y^2$
26. **Writing** Explain how to find the greatest common factor of a polynomial. Include an example.

Write an expression for each situation as a product and in standard form.

27. A rectangular computer screen has a length that is 8 in. less than 2 times its width. What is the area of the computer screen?

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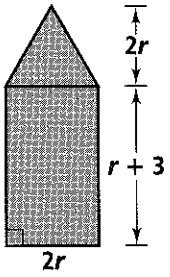
Chapter Test (continued) Form B

Chapter 9

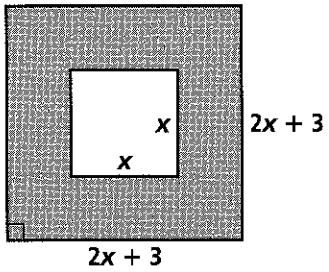
28. The length of an aquarium is 1 ft more than 3 times its height h. The width of the aquarium is 3 ft less than 2 times its height. What is the volume of the aquarium?

Geometry Write an expression for the area of each shaded region. Write your answer in simplest form.

29.



30.



Factor each expression.

31. $y^2 + 7y - 8$

32. $9y^2 + 12y + 4$

33. $3x^2 + 5x + 2$

34. $25y^2 - 64$

35. $y^2 - 8y + 16$

36. $x^2 - 289$

37. $16x^2 + 80x + 100$

38. $15x^2 - 60$

Write the value missing from each perfect square trinomial.

39. $x^2 - \_\_\_\_\_x + 25$

40. $\_\_\_\_\_y^2 + 14y + 1$

41. $9x^2 + 24x + \_\_\_\_\_$

42. $64y^2 - \_\_\_\_\_y + 1$

Identify the factor common to the first two terms and the factor common to the last two terms of the polynomial.

43. $7x^4 + 14x^3 - 21x + 42$

44. $32x^3 + 40x^2 - 8x - 10$

Factor completely.

45. $6y^4 + 18y^3 - 7y - 21$

46. $8x^4 - 8x^3 - 3x + 3$

47. $14x^3 - 7x^2 + 8x - 4$

48. $x^3 + 3x^2 + 9x + 27$

49. $-2x^3 + 4x^2 - x + 2$

50. $12x^3 - 8x^2 + 3x - 2$

51. Open-Ended Write a polynomial that can be factored as a difference of two squares.