Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Algebra I: Chapter 9 Study Guide

Short Answer

1. Write the polynomial in standard form.

   $4g - g^3 + 3g^2 - 2$

   Find the degree of the monomial.

2. $6x^8y^5$

3. Match the expression with its name.

   $6x^3 - 9x + 3$

   Simplify the difference.

4. $(4w^2 - 4w - 8) - (2w^2 + 3w - 6)$

5. Simplify the sum.

   $(4u^3 + 4u^2 + 2) + (6u^3 - 2u + 8)$

   Simplify the product.

6. $8x^2(4x^2 + 4y^6)$

7. $7a^3(5a^6 - 2b^3)$

   Factor the polynomial.

8. $24w^{12} + 64w^8$

9. Find the GCF of the terms of the polynomial.

   $8x^6 + 32x^3$

10. The Johnsons want to cover their backyard with new grass. Their backyard is rectangular, with a length of $3x - 5$ feet and a width of $4x - 10$ feet. However, their rectangular swimming pool, along with its surrounding patio, has dimensions of $x + 8$ by $x - 2$ feet. What is the area of the region of the yard that they want to cover with new grass?

    Simplify the product using FOIL.

11. $(4x + 3)(2x + 5)$

12. Simplify the product using the distributive property.

    $(5h - 5)(5h - 6)$

13. Find the missing coefficient.

$(5d - 7)(5d - 6) = 25d^2 + \blacksquare d + 42$

14. Simplify using the horizontal method.

$(2n^2 + 4n + 4)(4n - 5)$

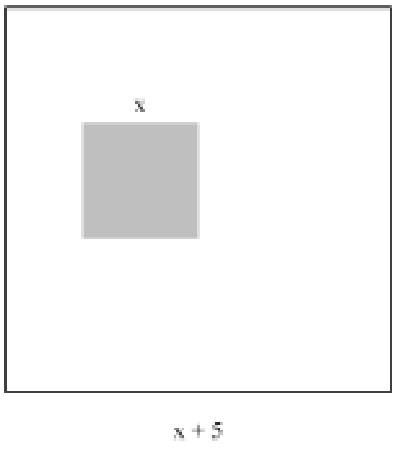
15. Simplify using the vertical method.

$(2k + 3)(2k^2 - 4k - 3)$

Find the square.

16. $(8m + 7)^2$

17. Find the area of the UNSHADED region. Write your answer in standard form.



18. Find 33^2 using mental math.

Find the product.

19. $(4p - 6)(4p + 6)$

20. $(4m^2 - 5)(4m^2 + 5)$

Complete.

21. $z^2 + 9z - 90 = (z - 6)(z + \blacksquare)$

Factor the expression.

22. $d^2 + 10d + 9$

23. $k^2 + kf - 2f^2$

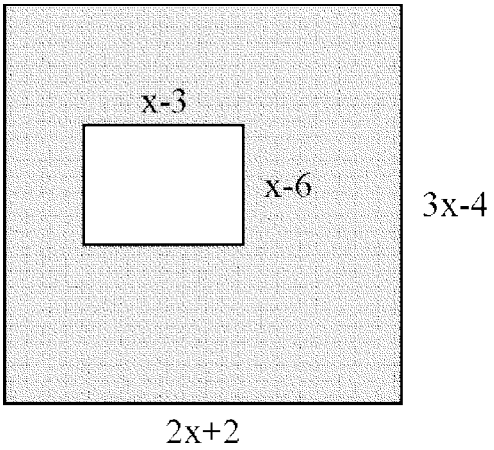
24. $21x^2 + 55x + 14$
25. $6g^2 + 11g - 35$
26. $36y^2 - 84y - 147$
27. $48g^2 - 22gh - 15h^2$
28. $d^2 - 14d + 49$
29. $49b^2 + 70b + 25$
30. $k^2 - 16h^2$
31. $49b^2 - 36$
32. $6g^3 + 8g^2 - 15g - 20$
33. $50k^3 - 40k^2 + 75k - 60$

Factor by grouping.

34. $a^2 + ab - 56b^2$
35. $40p^2 - 13p - 36$

Essay

36. Find the area of the shaded region. Show all your work.



Algebra I: Chapter 9 Study Guide
Answer Section

SHORT ANSWER

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2. OBJ: 9-1.1 Describing Polynomials
3. OBJ: 9-1.1 Describing Polynomials
4. OBJ: 9-1.2 Adding and Subtracting Polynomials
5. OBJ: 9-1.2 Adding and Subtracting Polynomials
6. OBJ: 9-2.1 Distributing a Monomial
7. OBJ: 9-2.1 Distributing a Monomial
8. OBJ: 9-2.2 Factoring a Monomial from a Polynomial
9. OBJ: 9-2.2 Factoring a Monomial from a Polynomial
10. OBJ: 9-3.1 Multiplying Two Binomials
11. OBJ: 9-3.1 Multiplying Two Binomials
12. OBJ: 9-3.1 Multiplying Two Binomials
13. OBJ: 9-3.1 Multiplying Two Binomials
14. OBJ: 9-3.2 Multiplying a Trinomial and a Binomial
15. OBJ: 9-3.2 Multiplying a Trinomial and a Binomial
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18. OBJ: 9-4.1 Finding the Square of a Binomial
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20. OBJ: 9-4.2 Difference of Squares
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22. OBJ: 9-5.1 Factoring Trinomials
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25. OBJ: 9-6.1 Factoring ax^2 + bx + c
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28. OBJ: 9-7.1 Factoring Perfect-Square Trinomials
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31. OBJ: 9-7.2 Factoring the Difference of Squares
32. OBJ: 9-8.1 Factoring Polynomials With Four Terms
33. OBJ: 9-8.1 Factoring Polynomials With Four Terms
34. OBJ: 9-8.2 Factoring Trinomials by Grouping
35. OBJ: 9-8.2 Factoring Trinomials by Grouping

ESSAY

36. OBJ: 9-3.1 Multiplying Two Binomials