

## Unit 7 Review

1. Find the degree of the monomial:  $4xy^4$
2. Find the degree of the polynomial:  $xy - 5xy^2 + 4x$
3. Write in standard form:  $9x^2 - 7x^3 + 2x - 11 + 3x^4$
4. Simplify:  $4x^2 - 5x + 6x^2 + 6 + 2x$
5. Simplify:  $(7x^2 - 2x^3 + 6x) + (5x + 2x^2 - 7x^3 - 4)$
6. Find the product:  $-3a^3(2a^2 - 7a + 10)$
7. Find the product:  $(7x^2 + 9)(2x^2 - 5x + 4)$
8. Find the product:  $(3y - 5)^2$
9. A square picture with side length  $x$  has a 2-inch frame around it. If the area of the frame alone is  $48 \text{ in}^2$ , which of the following is an equation that could be used to solve for  $x$ ?
 

[A]  $(x + 4)^2 = 48$     [B]  $(x + 4)^2 + x^2 = 48$     [C]  $(x + 4)^2 - x^2 = 48$     [D]  $x^2 + 4x = 48$
10. Identify the greatest common factor of the polynomial:  $18x^2y - 24xy^3 + 6x^5$     GCF = \_\_\_\_\_
11. Factor out the greatest common factor:  $7x^2 - 4x^3 + 20$ 

[A]  $x^2(7 - 4x) + 20$     [B]  $4x(x - x^2 + 5)$     [C]  $7x^2 - 4(x^3 - 5)$     [D] The expression is already fully factored
12. Factor:  $a^2 - 3a + ab - 3b$ 

[A]  $(a - 3)(a + b)$     [B]  $(a + 3)(a + b)$     [C]  $(a + 3)(a - b)$     [D] The expression is already fully factored

13. Factor:  $x^2 - 9x + 18$

[A] The expression is already fully factored    [B]  $(x+6)(x+3)$     [C]  $(x-6)(x-3)$     [D]  $x(x-9)+18$

14. Factor:  $x^2 + 5xy - 24y^2$

[A]  $(x-8y)(x+3y)$     [B] The expression is already fully factored

[C]  $x(x+5y)+y(5x-24y)$     [D]  $(x+8y)(x-3y)$

15. Factor:  $6n^2 + 15n - 36$

[A]  $(3n-12)(2n+3)$     [B]  $3(n+4)(2n-3)$     [C]  $3(n-4)(2n+3)$     [D]  $3(2n+4)(n-3)$

16. Factor:  $9x^2 - 30x + 25$

[A]  $(3x-5)(3x+5)$     [B]  $(3x-5)^2$     [C]  $(3x+5)^2$     [D] The expression is already fully factored

17. Factor:  $16y^2 - 49$

[A]  $(4y+7)(4y-7)$     [B]  $(4y-7)^2$     [C]  $(4y+7)^2$     [D] The expression is already fully factored

18. Simplify:  $(-6x+2)-(2x^2-7x+14)$

19. Find the product:  $(7x-3)(7x+3)$

20. What is the greatest common factor of:  $-24n^4 + 16n^2 - 8n$     \_\_\_\_\_

21. What pair of factors -30 has a sum of 7?    \_\_\_\_\_ and \_\_\_\_\_

Factor each expression completely. Circle your final answer.

22.  $7x^4 - 21x^3 + 14x^6$

23.  $y^3 + 5y^2 + 4xy + 20x$

24.  $n^2 - 4n - 21$

25.  $y^2 - 14y + 49$

26.  $12x^2 + 17x + 6$

27.  $y^2 - 64$