Name _____ Period _____

Unit 7 Study Guide: Polynomials

Don't forget to check the key, mark answers right or wrong, and make corrections in PEN!

Simplify each expression. You MUST show work to get credit.

1. $(9x^2 + 3x - 13) + (8x^2 + 4x - 5)$	2. $(x^2 - 5x + 8) - (x^2 - 3x + 12)$
3. $(2xy + 3y) - 5(4y - 3xy)$	4. $5x(8x^3 + 4x^2 - 9x)$
5. $(x - 12)(x + 12)$	6. $(4x - 5)^2$
7. $(x + 6)(x^2 - 12x + 27)$	8. $(6x + 2)(2x - 7)$

Factor each expression. You MUST show work to get credit.

9. $9x + 36$	10. $6a^3b^2 - 15a^2b + 81b^2$
11. $54x^4 - 24x^2$	12. $6x^2 - 54$
13. $x^2 + 15x + 54$	14. $3a^2 + 10a - 8$
15. $2x^2 - 13x - 7$	16. $x^2 + 2x - 14$

17. $2x^4 - 6x^3 - 56x^2$

18. **Which of the following is a factor of the expression $x^2 - 18x + 45$?**

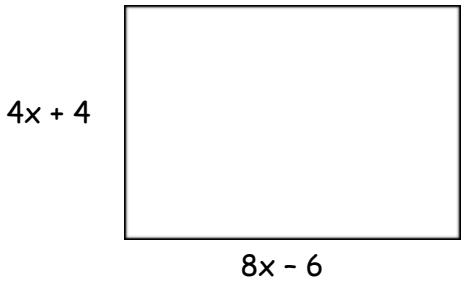
a. $x - 15$

b. $x + 3$

c. $x - 9$

d. $x - 5$

19. Write an expression to represent the area of the figure.



20. Circle all the factors of the polynomial: $21x^2 - 70x + 49$

7	$x - 7$	$x - 1$
3	$3x - 7$	$x + 7$

21. What is the greatest common factor of the expression: $3xy^2 + 6x^2y + 12xy$? _____

22. What is the greatest common factor of the expression: $48x^4 - 24x^3 + 96x^2$? _____

Divide each polynomial. You MUST show work to get credit.

23. $\frac{15x^2-16x-15}{5x+3}$

24. $\frac{4x^2-14x-60}{2x+5}$

25. $\frac{3x^3+27x^2-9x}{3x}$