

NAME: \_\_\_\_\_ Score \_\_\_\_\_ /100  
Please print

SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION

2 points each for questions 1 – 25. 5 points each for questions 26 – 35.

Circle T or F, whichever is correct.

1. T F If a system of equations consists of two equations in two variables then a solution of the system is a solution of both equations in the system.
2. T F If a system of equations consists of two equations in two variables then a solution of either equation is a solution of the system.
3. T F  $(x + y)^2 = x^2 + y^2$
4. T F  $5(x + 3) = 5x + 3$
5. T F The sum of two terms is a term.
6. T F If  $(x - 5)(x + 7) = 2$ , then  $x - 5 = 2$  or  $x + 7 = 2$ .
7. T F  $x^2 - 5 = (x - \sqrt{5})(x + \sqrt{5})$ .
8. T F The GCF of  $20x^3y$ ,  $10x^2y^2$ , and  $35x^3$  is  $5x^2$
9. T F The opposite of a polynomial is formed by replacing each coefficient with its opposite.
10. T F The opposite of a polynomial is formed by replacing the leading coefficient with its opposite.

Fill in each of the blanks to make the statements true.

11. The degree of  $5x^8$  is \_\_\_\_\_.
12. The coefficient of  $5x^8$  is \_\_\_\_\_.
13. The degree of  $3x^5 - 2x^4 + 2x^2 + x - 12$  is \_\_\_\_\_.
14. The leading term of  $3x^5 - 2x^4 + 21x^2 + 52x^7 - 38x^6$  is \_\_\_\_\_.
15. The leading coefficient of  $3x^5 - 2x^4 + 21x^2 + 52x^7 - 38x^6$  is \_\_\_\_\_.
16. Two systems of equations are \_\_\_\_\_ if they have the same solution set.
17. The solution of a system of two linear equations in two variables is the point where the two graphs \_\_\_\_\_.
18. A \_\_\_\_\_ is a term or a sum of terms in which all variables have whole number exponents.
19. Two polynomials are \_\_\_\_\_ if they have the same degree and corresponding coefficients are equal.

20. A second degree polynomial is called a \_\_\_\_\_ polynomial.
21. A polynomial consisting of two terms is called a \_\_\_\_\_.
22. A polynomial consisting of three terms is called a \_\_\_\_\_.
23. The product of two polynomials is a polynomial obtained by multiplying \_\_\_\_\_ term of the \_\_\_\_\_ times \_\_\_\_\_ term of the \_\_\_\_\_ and adding like terms.
24. To factor a number or algebraic expression means to write the number or expression as a \_\_\_\_\_.
25. **Zero Factor Property:** If a and b are real numbers and  $ab = 0$ , then \_\_\_\_\_ .

26. Factor  $5x^2 + 16x + 3$

27. Factor  $9x^2 - 49$

28. Use the substitution method to solve the system  $\begin{cases} 2x + 4y = -6 \\ x = 2y - 5 \end{cases}$ .

29. Compute the product  $-6xy(4x + y)$ .

30. Compute the product  $(3x + 1)(4x^2 - 2x + 5)$

31. Solve the equation  $(x - 5)(x^2 - 36) = 0$ .

32. Factor  $9x^2 - 64$ .

33. Factor  $17x^3y^2 - 34x^4y^2$ .

34. Factor  $x^2 + 10x + 16$

35. Factor  $25x^2 - 30x + 9$ .