

Name _____
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Date _____
Algebra II

Polynomials/Factoring Review Sheet

Prove the following identities

1. $(x+2)^2 + 2(x+2) - 8 = (x+6)x$

2. $m^5 + m^3 - 6m = m(m^2 + 3)(m^2 - 2)$

Divide the following polynomials

3. $\frac{2x^3 - x - 2}{x - 4}$

4. $\frac{-3x^2 + 10x - 6}{x + 1}$

Factor the follow expressions completely

5. $4t^2 - 25$

6. $m^2 - 8m + 15$

7. $x^4 - 8x^2 - 9$

8. $2x^2 - 50$

9. $2y^2 - 5y - 7$

10. $6x^2 + x - 12$

11. $x^3 + 3x^2 - 9x - 27$

12. $t^4 - 3t^3 - 18t^2 - t^2 + 3t + 18$

13. $(x^2 - 2x)^2 - 11(x^2 - 2x) + 24$

14. $y^3 - 125$

Express the following in simplest terms

15. $\frac{2x+6}{x^2-9}$

16. $\frac{10-5x}{x^2+2x-8}$

Solve the following equations for the given variable:

17. $n^2 = 3n + 18$

18. $x^3 + 10x^2 - 9x - 90 = 0$

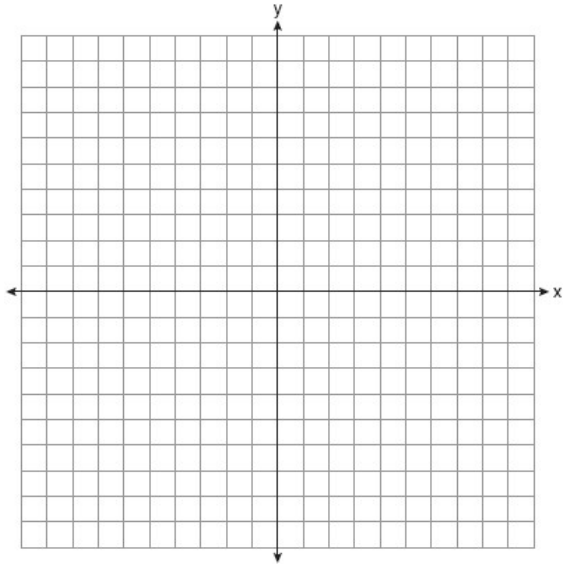
Solve the following systems algebraically for all values of x and y:

19. $x^2 + y^2 = 10$
 $x = y - 4$

20. $(x+2)^2 + (y-4)^2 = 40$
 $y = x + 2$

Solve the following systems graphically for all values of x and y :

21. $y = -x^2 + 2x - 1$
 $y + x = 1$



22. $y = x^2 + 6x - 1$
 $y + 1 = -x$

