Algebra Summer Review For Geometry Pre-AP

Date Due: August 30. This will count as a **Quiz grade**. You must solve the problems on notebook (or graph) paper using the method indicated. All work must be clearly shown with answers boxed. You should be able to complete these problems without using a calculator. A test will be given over the Summer Review which will averaged into your First 6 Weeks Geometry Pre-AP grade.

I. Solving Linear Literal Equations

1. Distance formula – Solve for t: $D = rt$
2. Area of a trapezoid – Solve for h: $A = \frac{1}{2} h (b_1 + b_2)$
3. Circumference of a circle - Solve for r: $C = 2\pi r$
4. Volume of a cone – Solve for h: $V = (1/3) \pi r^2 h$
5. Surface area of a prism – Solve for L: $S = 2wL + 2Lh + 2wh$

II. Finding Equations of Lines

Find the equation, in standard form of the line described:

6. slope -2/3 and y-intercept 6
7. containing (2, -5) and (4, 4)
8. x-intercept 4 and y-intercept -3
9. parallel to $3x - 6y = 5$, containing (-2, 4)
10. containing (-2, 6) and having slope -3

III. Solving Quadratic Equations by Factoring

11. $4x^2 - 9 = 0$
12. $y^2 - 24y + 144 = 0$
13. $x^3 - 24x = 5x^2$
14. $y^2 + 13y + 36 = 0$
15. $3x^2 + 16x = 35$
16. $2y^3 - 15y = y^2$

IV. Simplify:

16. $\frac{-36x^2yz^3}{-24xy^4}$ 17. $\frac{24x^4yz - 36x^8y}{-12x^3}$

18. $2(5x^2 - 3x) - 4(6x^2 - 2x)$

19. $-\frac{2}{3}g^2h(12gh^3 3h)$

20. $(2a^2b - 3c)(2ab^2 + 3c)$

V. Solve Quadratic Equations using the Quadratic Formula
Leave answers in simple radical form.

21. $-2x^2 + 8x + 3 = 1$
22. $2y^2 - 8y + 5 = 0$
23. $3x^2 - 5x = -1$
24. $3x^2 + 2 = -8x$

VI. Draw reasonable graphs of the following. Use graph paper.

25. $y = 2x - 3$
26. $y = x^2 - 4$
27. $4x + 3y = 12$
28. $x = -2$
29. $x = -1/2\ x + 3$

VII. Solving Systems of Equations

Solve by Substitution

30. $y = x - 3$
$4x + y = 32$

31. $2x = 5y$
$x + y = 1$

Solve by Elimination

32. $-x + 8y = 16$
$3x + 4y = 36$

34. $4x + 5y = 7$
$6x - 2y = -18$

33. $5x + 4y = 4$
$4x + 5y = 31/8$

35. $-7x + 8y = 32$
$5x + 6y = 24$

VIII. Solve by graphing on graph paper:

36. $x + 2y = -4$
$4y = 3x + 12$

37. $y = \frac{2}{3}x - 1$
$x + y = 0$

38. $y = -x + 4$
$3x + y = -4$

39. $4x + 3y = -15$
$y = x + 2$

40. $x = 3 - 3y$
$x + 3y = -6$

IX. Simplifying Radicals

41. $\sqrt{12} + \sqrt{75}$

42. $4\sqrt{12}\left(9\sqrt{6}\right)$

43. $\frac{\sqrt{12}}{\sqrt{50}} - \frac{\sqrt{27}}{\sqrt{8}}$

44. $\left(\sqrt{5} + 2\sqrt{3}\right)\left(\sqrt{5} - 4\sqrt{12}\right)$

45. $\sqrt{48x^7y^8z^3}$

X. Graph the inequalities on graph paper

46. $y \le -2x - 2$
$y \le x - 4$

47. $y < 7$
$x + 2y \ge 4$

48. $y \ge x - 2$
$x > 3$

49. $y < x$
$3x + 2y > 4$

50. $5x + 3y < x + 6$
$3x + y \ge 0$