Algebra II Pre-AP Summer Assignment

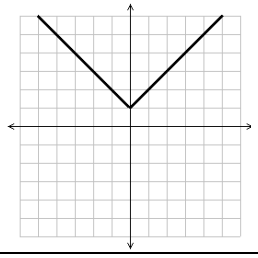
This assignment is designed to make the transition to Algebra II Pre-AP a smooth one. You will be practicing skills you have acquired in earlier math classes. **The entire assignment is due on the first day of class.** There will be a test on this material during the first week of school in the Fall.

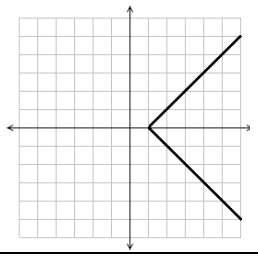
Directions: In order to receive credit all work must be completed **in pencil**. Remember that we care about process, so show your work carefully on lined paper. **This should include: problem numbers, calculations done neatly, sketches drawn carefully, and labeled answers (circled, underlined, or boxed). Graphs should be done on graph paper.** Organize your work into columns and work down, not across the paper**. No Calculators!**

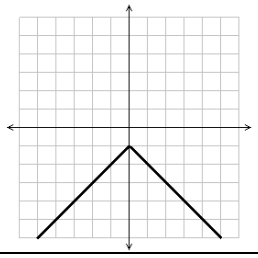
1. Evaluate: $-\frac{a}{3}+(2-b)^2$ *when* $a=-6;\ b=4$	2. Evaluate: $\lvert 8-5x\rvert-2$ *when* $x=2$
3. Simplify: $16-4+12\div 6\times 2$	4. Simplify: $2(6x-5(x-1))$
5. Simplify each expression: a. x^4x^8 b. $(x^6)^2$ c. $x^{12}x$ d. $(x^3)x^4$ e. $3x(2x^{11})$ f. $(3x^3)^2$	6. Simplify each expression: a) $\sqrt{50}$ b) $\sqrt{18}$ c) $\sqrt{48}$ d) $\sqrt{24}$ e) $\sqrt{250}$ f) $\sqrt{1000}$
7. Simplify: $\frac{9^6}{9^3}=$	8. Simplify: a) $\frac{25x^2}{5x^5}$ b) $\frac{9x^2y^3}{27x^5y}$
9. Simplify: a) $(4x^2+2x-7)+(2x^2-3x+5)$ b) $(4x^2+2x-7)-(2x^2-3x+5)$	10. Simplify: $(x+4)+(2x-3)(x+5)$
11. Multiply: a) $(x+5)(3x-4)$ b) $(x+5)^2$ c) $(x+1)(x+1)$ d) $(3x-5)^2$	12. Divide: $\frac{3}{7}\div\frac{9}{14}$
13. Solve for x: $\lvert 4x-10\rvert=6$	14. a) Solve for x: $10-\lvert x+2\rvert=3$ b) Graph the solution set on a number line.
15. Solve for x: $4x-3(2x-5)=16x$	16. Solve for x: $2(x-4)-4=3(x+7)$
17. Solve the system of equations: $x=-3y+5$ $2x+8y=4$	18. Solve the system of equations. $3x-5y=21$ $2x+10y=-26$
19. Graph the equation $y=-2x-4$	20. Graph the equation $y=\frac{1}{2}x+1$
21. Graph the inequality: $y>-2x+2$	22. Graph $-2x+3y=9$ and $4x-6y=12$. Are they parallel, perpendicular, or neither?
23. Without graphing, are the graphs of the two equations parallel, perpendicular, or neither? Explain how you can tell. $3x-5y=12$ and $5x+3y=20$	24. Write an equation that represents a line that is parallel to $y=-\frac{5}{4}x-9$ and has a y-intercept of 10.
25. What are the x-intercept and the y-intercepts of the line defined by the equation: $-2x+3y=24$?	26. What is the equation of the line with slope $\frac{1}{4}$ and goes through the point (8,-2)?
27. Which of the given points satisfies the equation $2x+4y=8$? a. $(0,4)$ b. $(-4,0)$ c. $(2,1)$ d. $(-4,2)$	28. What is the equation of the line the goes through (2, 4) and (3, -1)?

29. Factor: a^2+3a-4	30. Factor: $x^2-9x+20$
31. Factor: x^2-9	32. Factor: $81a^2-25$
33. Solve: $(x+3)(x-5)=0$	34. Find the solutions of this quadratic equation: $x^2-3x-18=0$
35. Solve by using the Quadratic Formula: $x^2+11x+28=0$	36. Solve by using the Quadratic Formula: (Leave answer in simplest radical form) $x^2-3x+1=0$
37. Use the Quadratic Formula to find the solutions to the equation $3x^2-11x=-5$. Express the solutions as radicals in simplest form. Be sure to set equation equal to 0 first.	38. Use the Quadratic Formula to find the solutions to the equation $8x^2+3x=1$. Express the solutions as radicals in simplest form. Be sure to set equation equal to 0 first.
39. The total cost (c) in dollars of renting a sod cutter for n days is given by the equation $c=20+60n$. If the total cost of renting the cutter is \$440, for how many days was the cutter rented?	40. A 60-foot-long piece of string is cut into 3 pieces. The second piece is twice as long as the first piece. The third piece is 5 feet longer than the second piece. What is the length of the shortest piece of rope?
41. The lengths of the sides of a triangle are x, $2x+2$, and 13. If the perimeter of the triangle is 30, what is the value of x?	42. A garden is 4x feet long and 5x feet wide. Write an expression (in simplest form) that represents the area of the garden.
43. Multiply and express in simplest terms: $\frac{7z^2+7z}{4z+8}\bullet\frac{z^2-4}{z^2+z}=$	44. Divide and express in simplest terms: $\frac{x^2+8x+16}{x+3}\div\frac{2x+8}{x^2-9}$

45. For which graph are all x values negative? Explain how you can tell.

a. 

b. 

c. 

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