	Algebra II Review Unit 1 page 1	
Si	mplify each of the following expressions.	
1.	3(2x+5)-7(5x-3) = 2. $4(9x+6)+3(5x-8) =$	
3.	$-3(5x+7) - 5(3x+2) = \underline{\qquad} 4. 7(6x-3) + 4(x-6) = \underline{\qquad}$	
Sc	olve each of the following equations.	

5. 8x + 3 = 15

6. 6x - 7 = 7

7. 9x + 5 = 5x + 28. 11x - 8 = 2x - 5

9. 5(x-7) + 3(2x+15) = x + 1010. 8(5x+3) - 6(3x-5) = 7 + 8(3x+5)

Solve each of the formulas for the specified variable.

11. A = .5bh solve for b 12. 3ax + 5by = 16 solve for y

13. kx - ht = 1 - ky + w solve for k 14. 3(ax + 4) - 5(bx + 3) = 3x + 1 solve for x

Write an inequality for each of the following intervals and sketch its graph.

15. [-5, -1] _____ 16. $(-\infty, 3]$ _____

17. $(2,\infty)$ _____ 18. [0,4) _____

Use interval notation to describe the solution set of each of the following inequalities.

20. -3 < x < 119. $x \ge 3$ 21. $22. \quad 0 \le x \le 3$ x < 0 Express each of the following as a single interval. $(-2,5) \cap (0,7) =$ 24. $(-\infty, 3] \cap [-1, \infty) =$ 23. **26.** [-1,3] \cup [1,5] = _____ $(0,\infty) \cap [-2,\infty) =$ 25. $(-\infty, 5) \cup [3, 7] =$ _____ 28. $(-\infty, 2] \cup (-\infty, -3) =$ 27.

Solve each of the following for x. Write the solution set as an interval or the union of intervals and sketch its graph.

29. 5(3x+1) + 3(x-7) > 230. 6(3x-2) + 2(x+3) < 12 + 8(2x-1)

31. $2(7x+4) - 4(5x+3) \le 2$ 32. $-3(5x+7) + 4(x+5) \ge x+1$ Solve each of the following for x. Write the solution set as an interval or the union of intervals and sketch its graph.

 $33. \quad -5 < 3x + 2 < 4 \qquad \qquad 34. \quad -3 \le 4x - 3 \le 7$

$$35. \quad -3 \leq \frac{5x+3}{4} \leq -1 \qquad \qquad 36. \quad -2 < \frac{3-4x}{3} < 1$$

37.
$$2x + 7 < 9$$
 and $-3x + 9 < 21$ 38. $4x - 10 \le 6$ and $2x + 7 \le 5$

Solve each of the following for x. Write the solution set as an interval or the union of intervals and sketch its graph.

39. $-6x - 9 \le 0$ and x + 3 < 040. -2x + 1 > 1 or 5x - 8 > 2

41. x - 7 > -4 or 5 - 2x < 9

42. $6x - 3 \ge 9$ or $4x - 6 \le 14$

Solve each of the following problems algebraically (one variable solutions please).

43. Tom, Dick, and Harry win a total of \$500. Tom wins \$10 less than 3 times the amount Harry wins. Dick wins \$30 more than twice the amount Harry wins. How much did each person win?

Solve each of the following problems algebraically (one variable solutions please).

44. Find four consecutive odd integers whose sum is 136.

45. A collection of ordinary nickels, dimes, and quarters is worth a total of \$15. The number of nickels is 5 less than 3 times the number of dimes, and the number of quarters is 3 less than the number of dimes. How many of each are in the collection?

46. The length of a rectangle is 6 <u>inches</u> less than twice the width. Find the dimensions of the rectangle if its perimeter is 13 <u>feet</u>. Express the answers in feet and inches.