Algebra 2 Unit 1 Review **Name** _____
Absolute Value Functions and Equations **Date** _____ **Block** _____

This review is a resource that you are to use to help you prepare for the unit assessment. It is not comprehensive. Review all materials from the unit and evaluate your own level of mastery for each learning target. Use <u>all</u> resources available to you, as needed, to best prepare for the unit assessment. Also, make sure you review the Essential Questions because you will have an essay.

Learning Target 1: I CAN identify each function family by its equation and the shape of its graph	
1-10: For each function family, state the parent function and <u>sketch</u> its graph.	
1. Identity Function **Equation:**	**2.** Absolute Value Function **Equation:**
3. Square Function **Equation:**	**4.** Cubic Function **Equation:**
5. Reciprocal Value Function **Equation:**	**6.** Square Root Function **Equation:**
7. Greatest Integer Function **Equation:**	**8.** Logarithmic Function **Equation:**
9. Exponential Function **Equation:**	**10.** Sine Function – Not on your test ☺ **Equation:**
Learning Target 2: Algebra I Prerequisite Skills: I CAN solve linear equations and inequalities; graph linear functions and inequalities	
11-12: Solve each equation for the indicated variable. Circle your final solution.	
11. Solve for h: $A = \frac{1}{2}(b \cdot h)$	**12.** Solve for L: $P = 2L + 2W$

13-18: Solve each equation or inequality. Show your work and circle your final solution. Graph the solution set for each inequality on a number line.

13. $5x < 9 + 2x$ or $9 - 2x > 11$

14. $\frac{1}{5}x + \frac{3}{10} = \frac{2}{30}x - 5$

15. $-8 \leq 3x - 20 \leq 52$

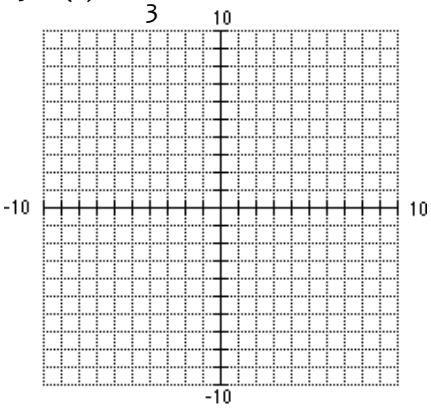
16. $1 + 5(x - 8) \leq 2 - (x - 5)$

17. $0.75(8x + 20) = 3 + 2(x - 1)$

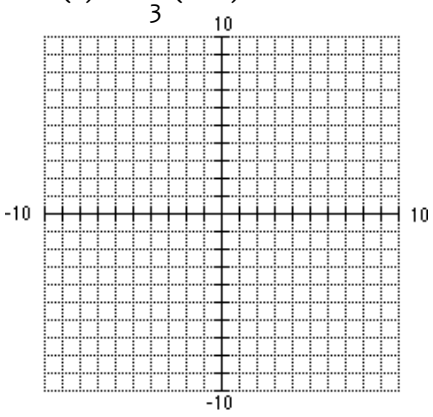
18. $-3(4w - 1) > 18$

19-24: Graph each function or inequality.

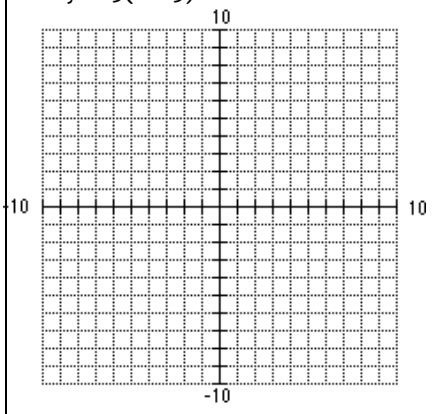
19. $f(x) = -\frac{2}{3}x + 1$



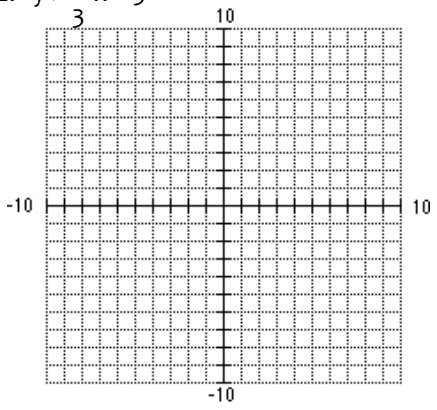
20. $f(x) = -\frac{2}{3}(x + 1) - 2$



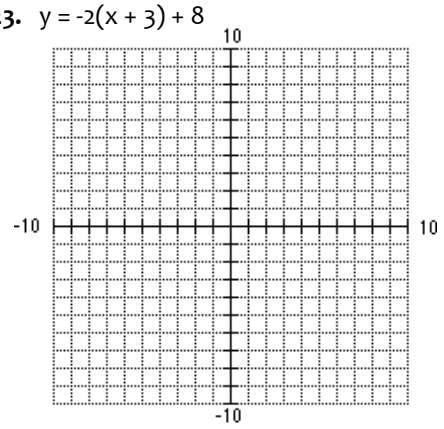
21. $y \leq -5(x - 5) + 8$



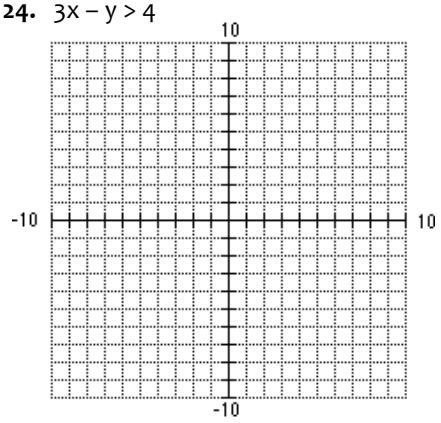
22. $y > \frac{4}{3}x - 5$



23. $y = -2(x + 3) + 8$



24. $3x - y > 4$



Learning Target 3: I CAN solve absolute value equations and inequalities

25-26: Evaluate each expression if a = -3, b = 7, and c = -2. Show your work and circle your final solution.

25. $3|a - b| + c$

26. $a|b - 7| - c|a|$

27-38: Solve each absolute value equation or inequality. State the solution using set builder notation.

27. $|t - 3| - 8 = 0$

28. $|3x + 2| \leq 7$

29. $|7 + 3a| = 11 - a$

30. $|x + 2| \leq 2x + 7$

31. $-2|7x| > 56$

32. $|x + 8| - 3 = -3$

33. $-6|2x - 14| = 42$

34. $|x + 8| > 3$

35. $4|2x| \geq -64$

36. $3|x - 5| - 7 = 2$

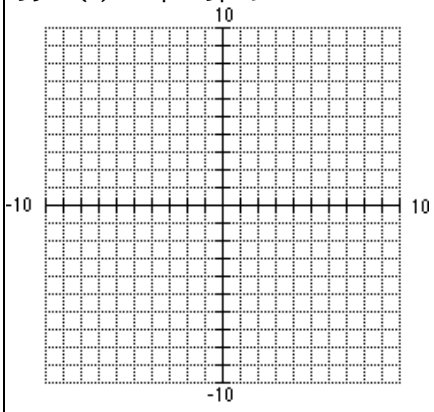
37. $-2|7 - 3y| - 6 = -14$

38. $2|4 - 3x| = 10x + 24$

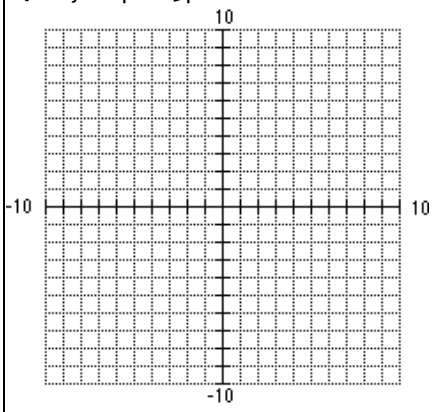
Learning Target 4: I CAN graph absolute value functions and inequalities

39-44: Graph each absolute value function or inequality.

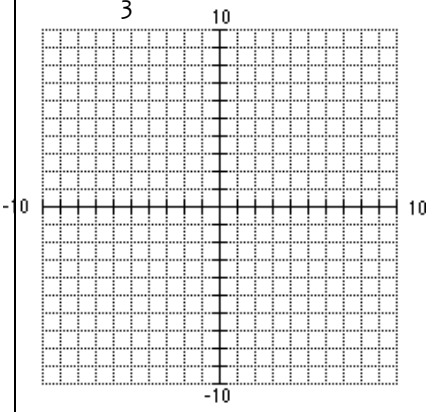
39. $f(x) = -2|x - 3| + 5$



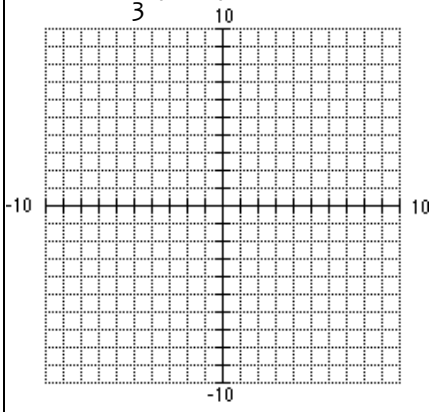
40. $y > 2|x + 5|$



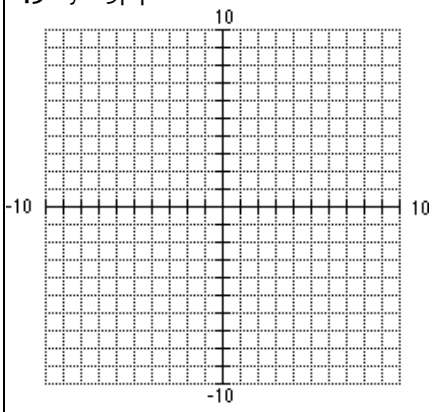
41. $y = \frac{2}{3}|x + 5| - 4$



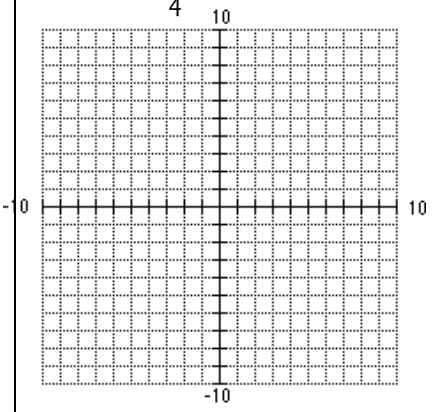
42. $y \leq -\frac{2}{3}|x - 4| + 3$



43. $y + 3|x| < 8$



44. $f(x) = -\frac{1}{4}|x|$



Learning Target 5: I CAN describe the transformation of the graph of a linear or absolute value function as compared to the graph of the parent function.

45-48: Given the parent functions f(x) = x and f(x) = |x|, completely describe the transformation of the graph of the function as compared to the parent graph.

45. $f(x) = 2|x| - 5$

46. $f(x) = 4(x + 6) - 2$

47. $f(x) = -3|x - 2| + 3$

48. $f(x) = \frac{1}{2}|x| - 7$