**Math 51 Ch. 9 Test** **Name:** _____

***WRITE EACH SOLUTION SET USING INTERVAL NOTATION. Double check your answers! Use Algebraic Notation AND Show All of Your Work. You may not leave to use the restroom. You may use a calculator, but not any scratch paper. Students are not allowed to share calculators!***

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1. (5 points) Solve $-2x + 7 \geq 9$

2. Solve $\frac{3}{4}(x - 7) \geq x + 2$

3. ***Multiple Choice*** Solve $-2(3x - 4) - 5 < 6x - 4(2 - x)$

   a) $\left(-\infty, -\frac{5}{4}\right)$ b) $\left(\frac{11}{16}, \infty\right)$ c) $\left(\frac{11}{4}, \infty\right)$ d) $\left(-\infty, \frac{11}{16}\right)$

4. Suppose $f(x) = -2x + 8$ and $g(x) = 3x + 5$. Find all $x$ values for which $f(x) > g(x)$. Use interval notation in your answer.

5. ***Multiple Choice***

   Hans can rent a van for either \$75 per day with unlimited mileage or \$45 per day with 100 free miles and an extra charge of 15¢ for each mile over 100. For what numbers of miles traveled would the unlimited mileage plan save Hans money? 5. _____

   a) Less than 350 b) Less than 300
   c) More than 350 d) More than 300

6. Find the intersection: $\{3, 6, 8, 11, 14\} \bigcap \{25, 15, 8, 3\}$

7. Find the interval solution of $-1 \leq -3t + 2 \leq 7$

8. Solve $5 - x > 7$ *and* $2x + 3 \geq 13$

9. Find the solution set for $x + 9 < 0$ *or* $4x \geq -12$

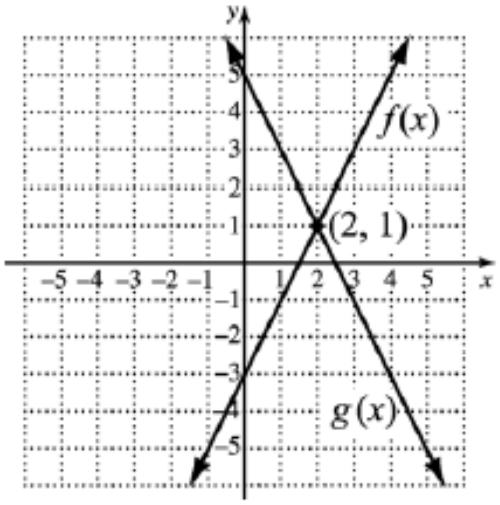
10. Solve $|5x - 7| + 8 = 1$

11. Solve $\left|2x-4\right| \leq 6$

12. Solve $\left|4-x\right| > 3$

13. Graph $\begin{cases} x+7 \geq -2 \\ x-y \geq 5 \end{cases}$

14. quad Using the graph, determine the solution of $f(x) \geq g(x)$




15. Solve $\left|2x+5\right| = 6$

16. Solve $3x < 20 + 2x < 2 + 3x$