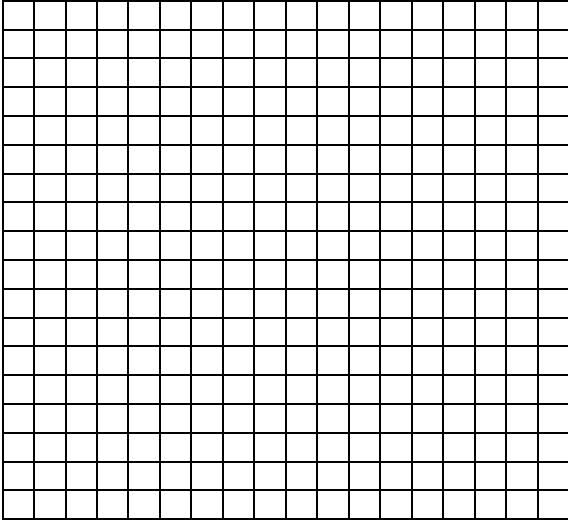


Show all necessary steps Clearly, Neatly, and Systematically to receive full credit. Any incorrect statement will be penalized.

1. Graph the solution set of the inequality: $-\frac{x}{6} - \frac{y}{9} > \frac{1}{3}$.



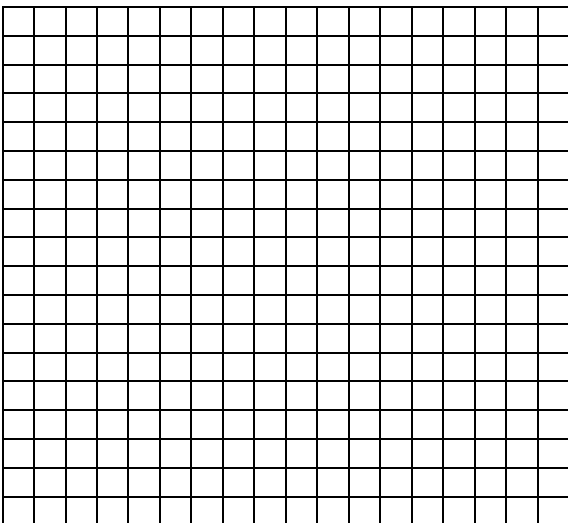
2. Solve: $\frac{3}{4}(x-2) - \frac{1}{5}(x-8) > -\frac{1}{2}$. Write the solution set in interval notation and graph.

3. Solve by substitution method:
$$\begin{cases} \frac{3}{2}x + y = 3 \\ \frac{2}{3}x + \frac{1}{3}y = 1 \end{cases}.$$

4. Solve: $13|14 - 15x| - 16 > 10$. Write the solution set in interval notation.

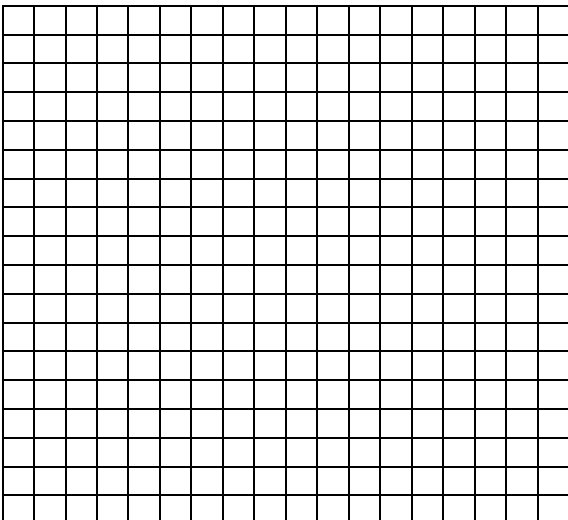
5. How much pure dye must be added to 4 gal of a 25% dye solution to make 40% dye solution. (*make sure to show in 3-steps format*)

6. Graph the solution set of the compounded inequality: $3x - 5y \leq 15$ and $x > 4$.



7. Solve: $-\frac{11}{13}x > -22$ or $3x + 2 \geq -7$. Write the solution set in interval notation and set-builder notation.

8. Graph the given function by transformation: $f(x) = -\sqrt{-x} - 3$. State the domain and range of the function.



9. Solve by elimination method:
$$\begin{cases} -2x + 5y + z = -3 \\ 5x + 14y - z = -11 \\ 7x + 9y - 2z = -5 \end{cases}$$

10. Solve:
$$\frac{1}{5} \left| \frac{2}{3}x + \frac{1}{6} \right| + \frac{5}{2} < \frac{1}{2}.$$

11. Solve: $\left| \frac{2}{3}x - 2 \right| = \left| \frac{1}{3}x + 3 \right|$.

12. Dan has invested \$12,000 in bonds paying 6%. How much additional money should he invest in a certificate of deposit paying 3% simple interest so that the total interest earned will be 4% of the total investment? (*Make sure to show in 3-steps format*)