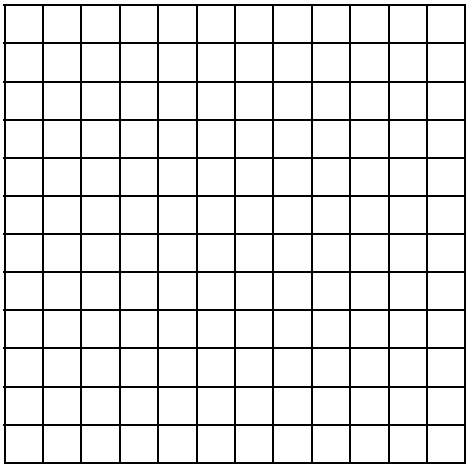
LINEAR EQUATIONS AND THEIR GRAPHS

Show **all** of your work for each problem.

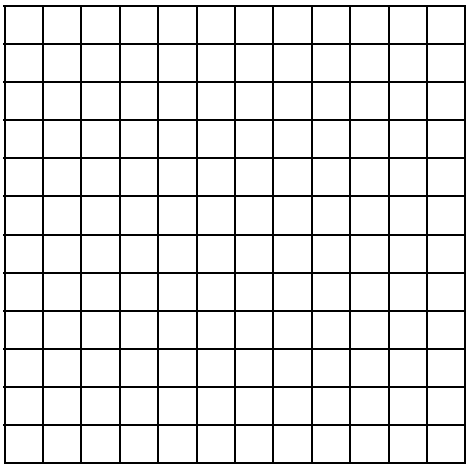
1. Find and **write** the x-intercept of the line with the given equation.

   $\frac{2}{3}x + \frac{1}{2}y = -2$



   Find and **write** the y-intercept of the line, and use the two intercepts to graph the line.

2. Find the slope and y-intercept of the line with the equation –5x + 3y = –9. **Write** the slope and y-intercept. Use the slope and y-intercept to graph the line.



3. Find and **write** the slope of the line with equation $-4x + 3y = -5$

   Find and **write** the slope of the line with equation $3x - 4y = 8$.

   Are these two lines parallel, perpendicular, or neither? Why?

   Graph these two lines on your calculator
   and **draw** a sketch of your graphs.

4. In 2000, the median age in South Carolina was 35.4 years. In 2004, the median age in South Carolina was 36.9 years.

   Find and **write** a linear equation that models the median age in terms of the year. [Hint: The line must pass through the points (2000,35.4) and (2004,36.9). Write the slope of the line as a decimal.]

   Use your equation to predict the median age in South Carolina in the year 2020.