Mathematics 1275CO/OL27   Quiz #1
Instructor: Suman Ganguli   Due: Thursday, Sept 16   Name: _____

1. Find the equation of the line passing through the points $(-1, 5)$ and $(3, -3)$, according to the following steps:

   a. What is the slope m of the line? Show your calculations:

   b. Write down the equation of the line in point-slope form, using the point $(-1, 5)$. (No need to simplify yet.)

   c. Write down another equation of the same line, also in point-slope form, but using the point $(3, -3)$:

   d. Simplify either (or both!) of your answers from (b) and/or (c) to get the equation of the line in slope-intercept form:

   e. Use any of the equivalent equations of the line from (b)-(d) to algebraically solve for the x-intercept (i.e., plug in $y = 0$ and solve for x):

   f. Sketch a graph of the line. Label the two given points $(-1, 5)$ and $(3, -3)$, and also label the x- and y-intercepts with their coordinates:
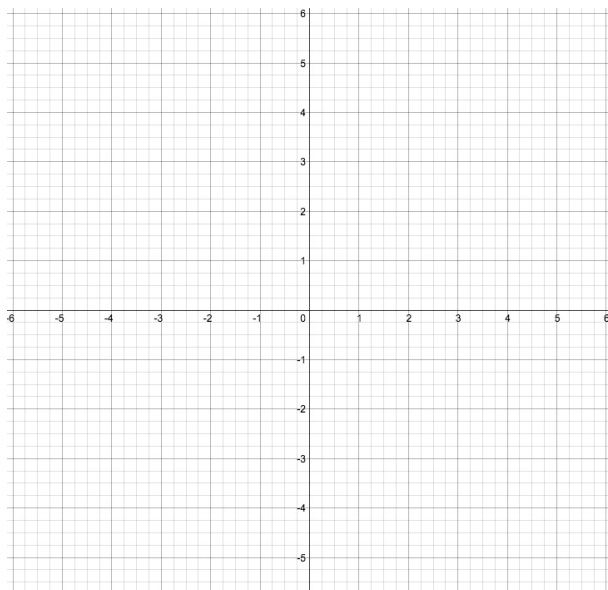
2. Consider the linear equation $x - 2y = -4$.

   a. Put the given linear equation in slope-intercept form:

   b. Solve for the x-intercept of the line algebraically:

   c. Sketch the graph of the line described by the equation. Label the x- and y-intercepts with their coordinates.
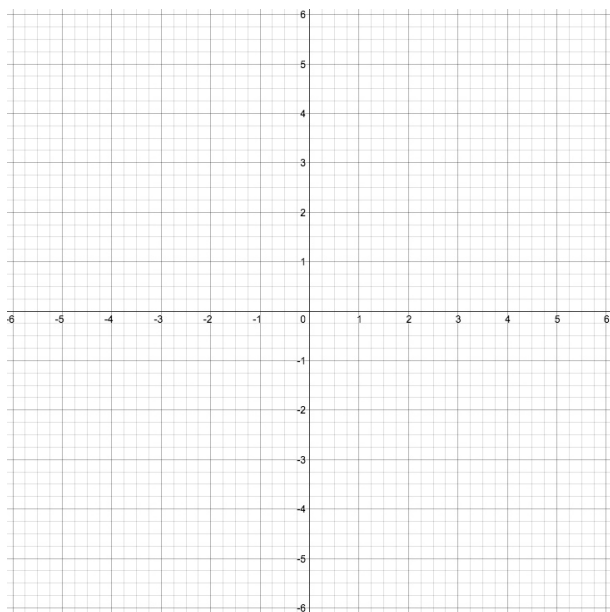
   d. What is the slope of any line perpendicular to the given line?

       $m_p =$

   e. Write down the equation of the line which passes through the point $(1, -3)$ and is perpendicular to the one you graphed above. Also sketch the graph of this line on the same coordinate plane.