Math 1400
Homework 1
Due Jan 26

1. Write an equaiton of the line with the indicated slope and y-intercept:
   (a) Slope $= \frac{4}{3}$, y-intercept $=$ -7
   (b) Slope $=$ -5, y-intercept $= 9$

2. Find the slope of the graph of each equation:
   (a) $5x - y = -2$
   (b) $2x - 3y = 18$

3. Write the equation of the line through each indicated point with the indicated slope:
   (a) $m = -6; (-3, 2)$
   (b) $m = \frac{4}{3}; (-2, 6)$

4. Find the slope of the line that passes through the given points, find the standard form of the equation of line and indicate whether the equation defines a linear function, a constant function, or neither:
   (a) (1,4) and (2,5)
   (b) ((2,3) and (-2,7)

5. Find the equation of the line that passes through the points (3, -2) and (-5, -8). Express your answer in slope-intercept form.

6. Find the slope and y-intercept of the line $4x - 5y = 30$.

7. (a) Find the vertical line that goes through the point (4,5)
   (b) What is the slope of the line in part (a)?
   (c) Find the horizontal line that goes through the point (4,5).
   (d) What is the slope of the line in part (c)?

8. Obtain the vertex and indicate whether it is a maximum or minimum for the quadratic function: $f(x) = -3x^2 - 18x - 12$.

9. Find the x-intercepts of the quadratic funtion $f(x) = 10x^2 - 52x - 15$. Round your answer to 3 decimal places.

10. For the function: $f(x) = -0.17x^2 + 0.87x + 2.7$, find the vertex and determine if it is a minimum or a maximum. Also find all intercepts.