Math 1300-018 Quiz 1, August 27, 2015   Name:_____
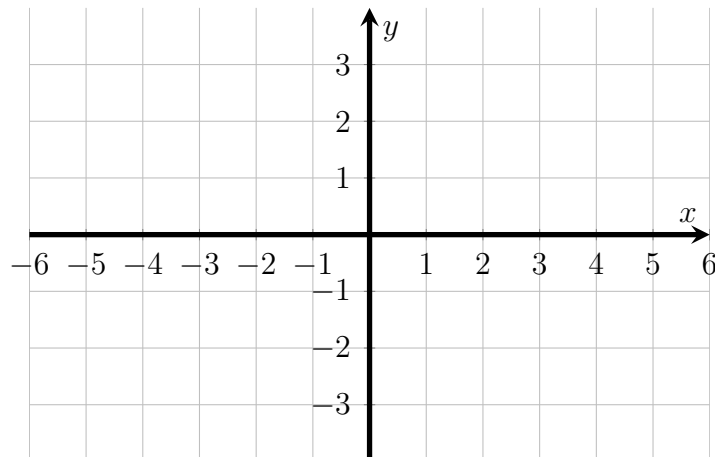
1. (a) Find an equation of the line through the points $(-2, 1)$ and $(4, 3)$.

    (b) Find an equation of the line with slope 1 that goes through the point $(2, 3)$.

    (c) What is the point of intersection of the lines from parts (a) and (b)? Sketch both lines on the axes below.

2. Solve the following equations:

   (a) $3 + 2\log_7(x^2 - 3x + 9) = 5$

   (b) $2 + 5^{3x-6} = 127$

3. Consider the function $f(x) = \dfrac{3x + 2}{4x + 3}$.

   (a) What is the domain of f?

   (b) Find $f^{-1}(x)$ (i.e., solve $y = \dfrac{3x + 2}{4x + 3}$ for x and switch the roles of y and x).
   What is the domain of f^{-1}?