Unit 0 HW #1
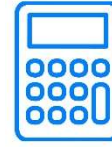
1. "Find f(3)" means to find the output of function f(x) for an input of $x = 3$.
   For the function $(x) = \frac{1}{x-2}$, find each of the following values.
   a. Find f(4). (This means find the output of the function when $x = 4$.)
   b. Find x when f(x) = 1. (This means find the input that gives an output of 1.)

2. Angelica is working with function machines. She has the two machines $g(x)=\sqrt{x-5}$ and $h(x)=x^2-6$. She wants to put them in order so that the output of the first machine becomes the input of the second. She wants to use a beginning input of 6.
   a. In what order must she put the machines to get a final output of 5?
   b. Is it possible for her to get a final output of -5? If so, show how she could do that. If not, explain why not.

3. Write down everything you know about the equation $y = mx + b$. You should include what this general equation represents, as well as what each of the different letters represents. Be as thorough as possible.

4. Use the Zero Product Property and factoring, when necessary, to solve for x. The Math Notes box for Lesson 0.1.4 may be useful, if you need help.
   a. $(x+13)(x-7) = 0$
   b. $(2x+3)(3x-7) = 0$
   c. $x(x-3) = 0$