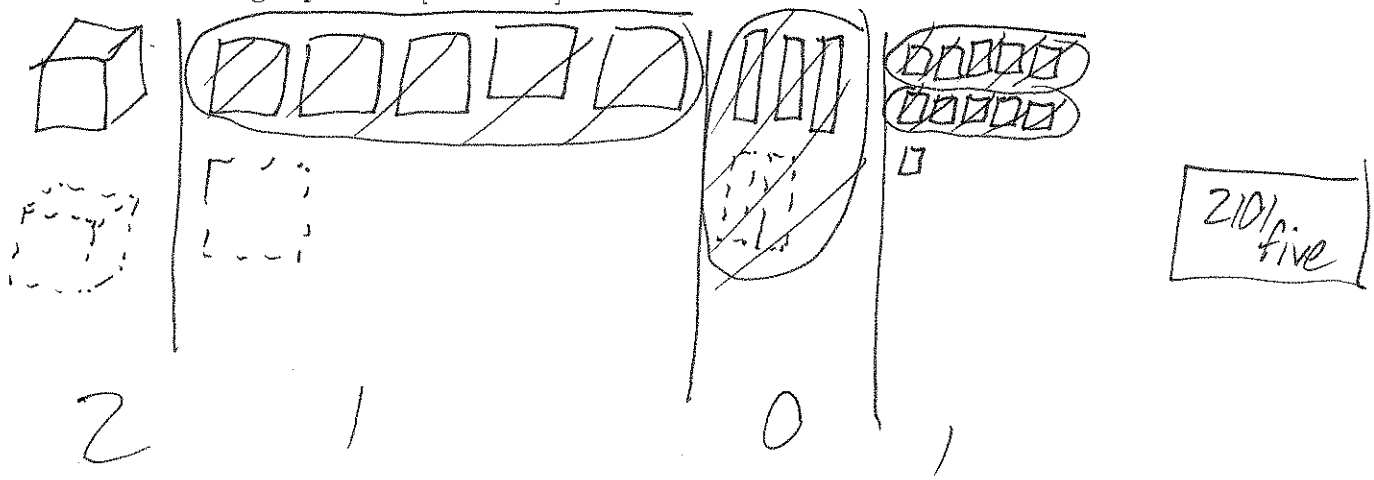
Name: Key

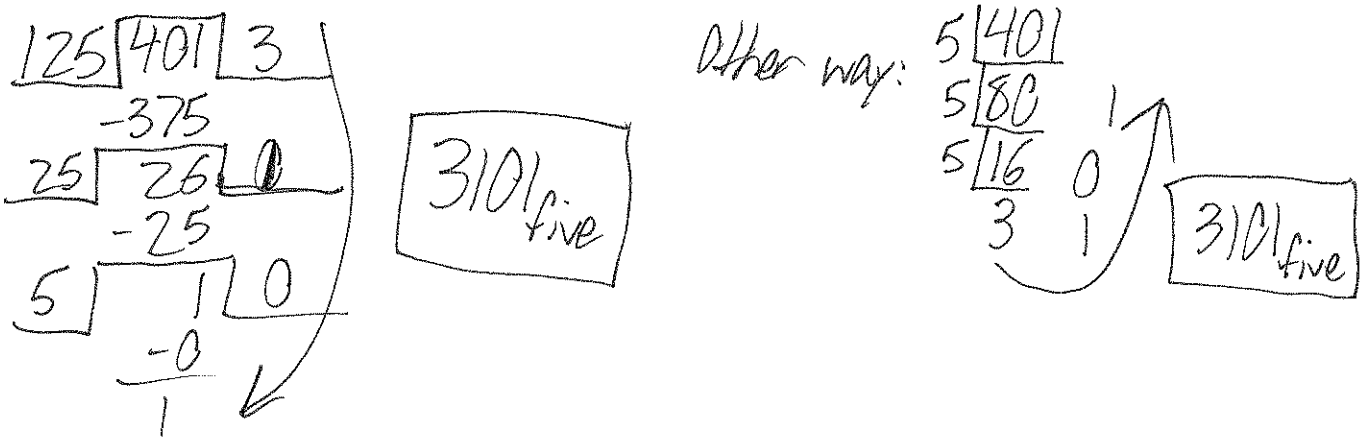
Math 221: Quiz 2 - 6/4/14

Solve the following problems. Write down the methods you used when trying to solve the problems.

1. Using base five, suppose that you have 1 cube, 5 flats, 3 longs, and 11 units. Perform the exchanges to write this situation as a base five number. You may show your work either by explaining each step in words or drawing a picture. [50 Points]



2. (a) Convert the number 401_{ten} to base 5. Remember, you cannot use the second method given in class until someone proves it works. [30 Points]



(b) Check your work by converting your answer back to base 10. Note that if you get a different answer than 401, you should check you work for both steps. [20 Points]

$= 3(5^3) + 1(5^2) + 0(5) + 1$

$= 3(125) + 1(25) + 0 + 1$

$= 375 + 25 + 1 = 401_{\text{ten}}$