

MATH 290-NUMBER THEORY FOR TEACHERS
 PROBLEM OF THE DAY #20
 DUE FRIDAY, APRIL 4, 2014

1. Consider $\sqrt{2}$. If we were to write $\sqrt{2}$ as a continued fraction, could the continued fraction be finite? What must the first coefficient be? That is, if

$$\sqrt{2} = a_1 + \frac{1}{a_2 + \frac{1}{\ddots}}$$

what is a_1 ? Can you find a_2 ? Can you find the whole continued fraction expansion?