Homework 4
Due Date: February 12

Problem 1. (From the book.) Do the following problems:
Chapter 5 Problem Set, pages 41–42: 3-8, 17, 19, 20

Problem 2. (China, pre-500 A.D) A band of seventeen pirates plunder a town containing a chest full of gold coins. Once back on the boat, the pirates try to divide the coins into equal portions, only to find that three coins remain. In the ensuing brawl over who should get the extra coins, one pirate is killed. An attempt to redistribute the wealth is made, but this time an equal division leaves ten coins. Again, another argument develops in which another pirate is killed. The mourning is short lived, as the upside to this tragedy is soon realized: the third attempt to split the haul results in an even split amongst the fifteen remaining pirates, and they go pretty heavy on the grog for the next few days and nights. What is the smallest number of gold coins that could have been in the stolen chest?

Problem 3. (India, 7th century A.D.) When eggs in a basket are removed 2, 3, 4, 5, 6 at a time there remain, respectively, 1, 2, 3, 4, 5 eggs. When they are taken out 7 at a time, none are left over. Find the smallest number of eggs that could have been contained in the basket.