Mathematics 1350H – Linear algebra I: Matrix algebra

Trent University, Summer 2014

Assignment #1
Two classic puzzles

Due in class on Tuesday, 13 May, 2014.

The two questions below are similar to problems posed in the Middle Ages, and may well go back farther than that.

1. Three men robbed a gentleman of a vase, containing 24 ounces of balsam. Whilst running away they met in a wood with a glass-seller, of whom in a great hurry they purchased three vessels. On reaching a place of safety they wished to divide the booty, but they found that their vessels contained 5, 11, and 13 ounces respectively. How could they divide the balsam into equal portions? (Explain in detail, please!) *[5]*

2. A game is played by two people, say A and B. A begins by mentioning some number not greater than six, B may add to that any number not greater than six, A may add to that again any number not greater than six, and so on. The winner is the first to reach fifty. Assuming both A and B play as well as possible, which one should win? Explain why in detail. *[5]*