MATH 2603, Fall 2015, Quiz 4, Sep 30 2015: Closed book, no calculators.
Instructor: Esther Ezra.

You can answer all questions on this sheet, but may use extra sheets (from your personal notepad) if needed.

Name _____ GT IDnumber _____

Problem 1. (100 points)

(a) (50 points)

Let a, b, x, y be integers, and let n be a natural number.

Suppse that $a \equiv x \mod n$ and $b \equiv y \mod n$. Show that:

$$a + b \equiv (x + y) \mod n.$$

(b) (50 points)

Based on part (a), solve the following pair of congruence, or show that there is no solution.

$$2x + 3y \equiv 1 \mod 6$$

$$x + 3y \equiv 4 \mod 6.$$