MAT 311, Homework 8 due 10/31

1. (a) Find all integer solutions of the equation $38x + 28y = 19$.

(b) Find all solutions of the congruence $38x + 28y \equiv 31 \mod 41$.

2. Find all integer solutions of the following systems of congruences.

(a)
$$5w + 3x + 2y + z = 9$$
$$w + x + y + z = 2$$
$$2w + 7x + y + 3z = 4.$$

(b)
$$3x - y + z = 7$$
$$-3x + 3y + 5z = 2$$

Please also do question 11 from section 5.2.