Homework, 7.4

1. Given the optimal solution below, find Δ so that the current basis remains optimal, if we want to change c_{22} from 12 to $12 + \Delta$.

	$v_1 = 6$	$v_2 = 6$	$v_3 = 10$	$v_4 = 2$	Supply
$u_1 = 0$	8	6 10	10 25	9	35
$u_2 = 3$	9 45	12	13 5	7	50
$u_3 = 3$	14	9 10	16	5 30	40
Demand	45	20	30	30	125

2. Given the optimal solution below, find Δ so that the current basis remains optimal, if we want to change c_{32} from 9 to $9 + \Delta$. An extra table below is included, if you want to use it for your computations.

	$v_1 = 6$	$v_2 = 6$	$v_3 = 10$	$v_4 = 2$	Supply
$u_1 = 0$	8	6 10	10 25	9	35
$u_2 = 3$	9 45	12	13 5	7	50
$u_3 = 3$	14	9 10	16	5 30	40
Demand	45	20	30	30	125

	$v_1 =$	$v_2 =$	$v_3 =$	$v_4 =$	Supply
$u_1 = 0$	8	6 10	10 25	9	35
$u_2 =$	9 45	12	13 5	7	50
$u_3 =$	14	9 10	16	5 30	40
Demand	45	20	30	30	125

3. Given the optimal solution below, find the new optimal solution if we add Δ to Demand 2, Supply 3.

	$v_1 = 6$	$v_2 = 6$	$v_3 = 10$	$v_4 = 2$	Supply
$u_1 = 0$	8	6 10	10 25	9	35
$u_2 = 3$	9 45	12	13 5	7	50
$u_3 = 3$	14	9 10	16	5 30	40
Demand	45	20	30	30	125

4. Given the optimal solution below, find the new optimal solution if we add Δ to Demand 4, Supply 2. Also compute the change in z. An extra table is below if you want to use it.

	$v_1 = 6$	$v_2 = 6$	$v_3 = 10$	$v_4 = 2$	Supply
$u_1 = 0$	8	6 10	10 25	9	35
$u_2 = 3$	9 45	12	13 5	7	50
$u_3 = 3$	14	9 10	16	5 30	40
Demand	45	20	30	30	125

	$v_1 = 6$	$v_2 = 6$	$v_3 = 10$	$v_4 = 2$	Supply
$u_1 = 0$	8	6 10	10 25	9	35
$u_2 = 3$	9 45	12	13 5	7	50
$u_3 = 3$	14	9 10	16	5 30	40
Demand	45	20	30	30	125