

In Class Work, 7.3

- Given the BFS below, compute the solution to the dual and determine if the BFS gives the optimal solution. If not, say which cell should come into the basis.

	$v_1 =$	$v_2 =$	$v_3 =$	$v_4 =$	Supply
$u_1 =$	2 5	3	5	6	5
$u_2 =$	2 7	1 3	3	5	10
$u_3 =$	3	8 5	4	4 6	15
Demand	12	8	4	6	30

- Continuing from the previous answer, update the tableau and check if it is optimal:

	$v_1 =$	$v_2 =$	$v_3 =$	$v_4 =$	Supply
$u_1 =$	2	3	5	6	5
$u_2 =$	2	1	3	5	10
$u_3 =$	3	8	4	6	15
Demand	12	8	4	6	30

3. Use MODI (modified distribution) to determine if the following solution is optimal. If it is not, obtain the new BFS and also check it for optimality.

There are two blank tableau for you to use as you wish.

	$v_1 =$	$v_2 =$	$v_3 =$	$v_4 =$	Supply
$u_1 =$	4	6	8	8	40
	20	20			
$u_2 =$	6	8	6	7	60
			50	10	
$u_3 =$	5	7	6	8	50
		10		40	
Demand	20	30	50	50	150

	$v_1 =$	$v_2 =$	$v_3 =$	$v_4 =$	Supply
$u_1 =$	4	6	8	8	40
$u_2 =$	6	8	6	7	60
$u_3 =$	5	7	6	8	50
Demand	20	30	50	50	150

	$v_1 =$	$v_2 =$	$v_3 =$	$v_4 =$	Supply
$u_1 =$	4	6	8	8	40
$u_2 =$	6	8	6	7	60
			50		
$u_3 =$	5	7	6	8	50
Demand	20	30	50	50	150

4. Consider the following initial BFS, which is degenerate. Determine an appropriate cell for a BFS, then determine if the BFS is optimal. If it is not, determine a new BFS using the MODI, or $u - v$ method.

	$v_1 =$	$v_2 =$	$v_3 =$	$v_4 =$	Supply
$u_1 =$	4 20	6 20	8	8	40
$u_2 =$	6	8 10	6 50	7	60
$u_3 =$	5	7	6	8 50	50
Demand	20	30	50	50	150

	$v_1 =$	$v_2 =$	$v_3 =$	$v_4 =$	Supply
$u_1 =$	4	6	8	8	40
$u_2 =$	6	8	6	7	60
$u_3 =$	5	7	6	8	50
Demand	20	30	50	50	150

	$v_1 =$	$v_2 =$	$v_3 =$	$v_4 =$	Supply
$u_1 =$	4	6	8	8	40
$u_2 =$	6	8	6	7	60
$u_3 =$	5	7	6	8	50
Demand	20	30	50	50	150