

## §4.5 (PART 2): SIMPLEX ALGORITHM

1.] Solve the following two-variable LP problem using the Simplex Method:

$$\text{Maximize: } z = 2x_1 + 3x_2$$

$$\text{Subject to: } x_1 + 2x_2 \leq 6$$

$$2x_1 + x_2 \leq 8$$

$$x_1, x_2 \geq 0$$

Row	Basic		RHS
0	$z$		
1			
2			

Row	Basic		RHS
0'	$z$		
1'			
2'			

Row	Basic		RHS
0''	$z$		
1''			
2''			

2.] Solve the following two-variable LP problem using the Simplex Method:

$$\text{Maximize: } z = 2x_1 - x_2 + x_3$$

$$\text{Subject to: } 3x_1 + x_2 + x_3 \leq 60$$

$$x_1 - x_2 + 2x_3 \leq 10$$

$$x_1 + x_2 - x_3 \leq 20$$

$$x_1, x_2, x_3 \geq 0$$

Row	Basic		RHS
0	$z$		
1			
2			
3			

Row	Basic		RHS
0'	$z$		
1'			
2'			
3'			

Row	Basic		RHS
0''	$z$		
1''			
2''			
3''			

Row	Basic		RHS
0'''	$z$		
1'''			
2'''			
3'''			

Row	Basic		RHS
0''''	$z$		
1''''			
2''''			
3''''			