1 (a) and 1 (b)



X, = units of hard bugs of seed X2 = units of Vermted buys of seed

Linear

Max 275.75x, +120.50x1 St. 100.05x, +60.75x2 < 810.50 5.50x, +10.25x2 < 655.80 75.30x, +24.84x2 < 520.75 x,,x2 ZO

& Standard Form

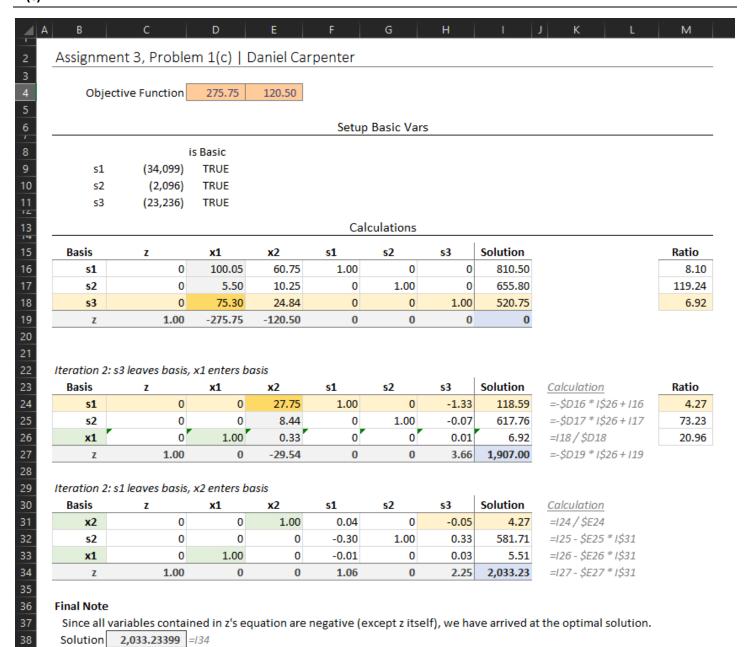
Max $275.75x_1 + 120.50x_2$ St. $100.05x_1 + 60.75x_2 + S_1$ = 810.50 $5.50x_1 + 10.25x_2$ + S_2 = 655.80 $75.30x_1 + 24.84x_2$ + S_3 = 520.75 x_1x_2 , S_1 , S_2 , $S_3 \ge 0$

16

Using My graph from assignment two, there are 3 extreme points within the feasible region. (intersection of lines of constraints)

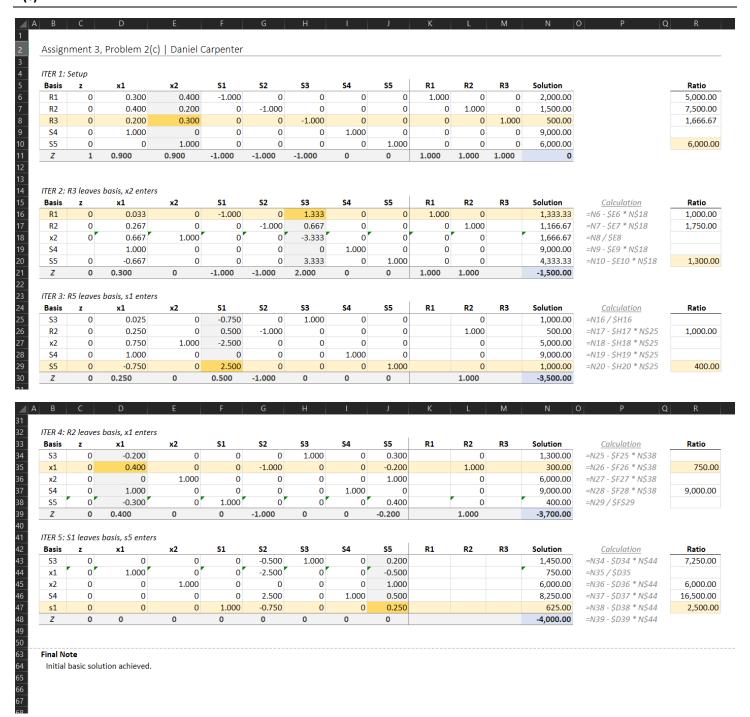
Bresic: S₁ = 810.50, S₂ = 655.80, S₃ = 520.75

Fearable: 3



i. Initializa	ation of Ba	sic Variab	es									
Iteration (0: Setup											
Basic	Z	x1	x2	s1	s2	s3		s4	s5	Solution		
s1	0	0.30	0.40	-1.00			0	0	0	2,000.00		
s2	0	0.40	0.20		-1.0		0	0	0	1,500.00		
s3	0	0.20	0.30			0 -1.0		0	0	500.00		
x1	0	1.00	0				0	1.00	0	9,000.00		
x2	0	0	1.00				0	0	1.00	6,000.00		
Z	1.00	-20.00	-15.00	()	0	0	0	0	0		
Iteration 1	1: Make s1	, s2, and s	3 identity						1			
Basic	Z	x1	x2	s1	s2	s3		s4	s5	Solution	Calc	culation
s1	0	-0.30	-0.40	1.00)	0	0	0	0	-2,000.00	=K27 * \$	
s2	0	-0.40	-0.20		1.0		0	0	0	-1,500.00	=K28 * \$	
s3	0	-0.20	-0.30	(0 1.0	0	0	0	-500.00	=K29 * \$	SH\$29
x1	0	1.00	0				0	1.00	0	9,000.00		
x2	0	0	1.00				0	0	1.00	6,000.00		
Z	1.00	-20.00	-15.00	()	0	0	0	0	0		
Iteration 2	2: Make x1	identity										
Basic	z	x1	x2	s1	s2	s3		s4	s5	Solution	Calc	culation
s1	0	0	-0.40	1.00)	0	0	0.30	0	700.00	=K36 - \$	D36 * K\$4
s2	0	0	-0.20	(1.0	0	0	0.40	0	2,100.00	=K37 - \$	D37 * K\$4
s3	0	0	-0.30	()	0 1.0	0	0.20	0	1,300.00	=K38 - \$	D38 * K\$4
x1	0	1.00	0	()	0	0	1.00	0	0.000.00		
XI	U	1.00	U	(,	U	0	1.00	U	9,000.00		
x2	0	1.00	1.00				0	0	1.00	6,000.00	=K40 - \$	D40 * K\$4
			1.00 -15.00	()	0			1.00			D40 * K\$4 D41 * K\$4
x2 z	0 1.00 C Make x2 ide	O O O D Pentity	1.00 -15.00	((G	0 0 H I	0	0 20.00	1.00 0 1	6,000.00 180,000.00	=K41 - \$	D41 * K\$4
x2 z B Iteration 3: Basic	0 1.00 C Make x2 ide	0	1.00 -15.00 E	F 1	G s2 s	0 0 H I	0	0 20.00	1.00 C I	6,000.00 180,000.00 L	=K41 - \$ M	D41 * K\$4
Z B Iteration 3: Basic s1	0 1.00 C Make x2 ide z	0 0 D entity x1	1.00 -15.00 E x2 s	F 1.00) G s2 s	0 0 0 1 1 3 s4 0	0 0 1 0.30	0 20.00 J s5 0.40	1.00 0 1 K Solution 3,100.0	6,000.00 180,000.00 L Cal =K45 - \$	=K41 - \$ M culation \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	D41 * K\$4 N C Rat 10,33
x2 z B Iteration 3: Basic s1 s2	0 1.00 C Make x2 ide	0	1.00 -15.00 E	1.00 0	G s2 s	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 0.30 0.40	0 20.00 J s5 0.40 0.20	1.00 0 1 K Solution 3,100.0 3,300.0	6,000.00 180,000.00 L Cal EA5 - \$\cdot \text{Cal} = K45 - \$\cdot \text{Cal} = K46 - \$\cdot \	=K41 - \$ M culation \$ \$E45 * K\$58 \$ \$E46 * K\$58	N C Rat 10,33 8,25
Z B Iteration 3: Basic s1	0 1.00 C Make x2 ide z 0 0	0 0 0 entity x1 0	1.00 -15.00 E x2 s	F 1.00	G S2 S 0 1.00	0 0 0 1 1 1 3 s4 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 1 0.30	0 20.00 J s5 0.40	1.00 0 1 K Solution 3,100.0	6,000.00 180,000.00 L Cal E445 - \$ 00 = K46 - \$ 00 = K47 - \$	=K41 - \$ M culation \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	D41 * K\$4 N C Rat 10,33
B Iteration 3: Basic s1 s2 s3	0 1.00 C Make x2 ide z 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 -15.00 E x2 s	1.00 0	6 S2 S 0 1.00 0	0 0 0 1 1 1 3 s4 0 0 0 1 1.00 0 1	0 0 1 0.30 0.40 0.20	0 20.00 J s5 0.40 0.20 0.30	1.00 0 1 K Solution 3,100.0 3,300.0 3,100.0 9,000.0	6,000.00 180,000.00 L Cal E445 - 9 E446 - 9 E447 - 9 E448 - 9	=K41 - \$ M culation \$E45 * K\$58 \$E46 * K\$58 \$E47 * K\$58	N C Rate 10,33 8,25 15,50
B Iteration 3: Basic s1 s2 s3 x1	0 1.00 C Make x2 ide z 0 0 0	0 0 entity x1 0 0 0	1.00 -15.00 E x2 s	1 s 1.00 0	6 S2 S O 1.00 O O	3 s4 0 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0.30 0.40 0.20 1.00	0 20.00 J s5 0.40 0.20 0.30 0 1.00	1.00 0 1 K Solution 3,100.0 3,300.0 3,100.0 9,000.0	6,000.00 180,000.00 L Cal 00 = K45 - \$ 00 = K46 - \$ 00 = K47 - \$ 00 = K48 - \$ 00 = K48 - \$	=K41 - \$ M culation \$E45 * K\$58 \$E46 * K\$58 \$E47 * K\$58	N C Rate 10,33 8,25 15,50
x2 z B	0 1.00 C Make x2 ide z 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 1.00 0 0	1.00 -15.00 E x2 s 0 0 0 0 0 1.00	1.00 0 0 0 0	6 S2 S O 1.00 O O O O	3 s4 0 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 0.30 0.40 0.20 1.00	0 20.00 J s5 0.40 0.20 0.30 0 1.00	1.00 0 1 K Solution 3,100.0 3,300.0 3,100.0 9,000.0 6,000.0	6,000.00 180,000.00 L Cal 00 = K45 - \$ 00 = K46 - \$ 00 = K47 - \$ 00 = K48 - \$ 00 = K48 - \$	=K41 - \$ M culation \$E45 * K\$58 \$E46 * K\$58 \$E47 * K\$58 \$E48 * K\$58	N C Rate 10,33 8,25 15,50
Basic s1 s2 s3 x1 x2 z	0 1.00 C Make x2 ide z 0 0 0 0 1.00 (see last ste	0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0 0	1.00 -15.00 E x2 s 0 0 0 0 1.00 0	1.00 0 0 0 0 0	6 S2 S O 1.00 O O O O	3 s4 0 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 0.30 0.40 0.20 1.00	0 20.00 J s5 0.40 0.20 0.30 0 1.00	1.00 0 1 K Solution 3,100.0 3,300.0 3,100.0 9,000.0 6,000.0	6,000.00 180,000.00 L Cal 00 = K45 - \$ 00 = K46 - \$ 00 = K47 - \$ 00 = K48 - \$ 00 = K48 - \$	=K41 - \$ M culation \$E45 * K\$58 \$E46 * K\$58 \$E47 * K\$58 \$E48 * K\$58	N C Rate 10,33 8,25 15,50
x2 B Iteration 3: Basic \$1 \$2 \$3 \$x1 \$x2 \$z	0 1.00 C Make x2 ide z 0 0 0 0 1.00 (see last ste	0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0 0 0 0	1.00 -15.00 E x2 s 0 0 0 0 1.00 0 ratio used in	1.00 0 0 0 0 0 0	6 S2 S O 1.00 O O O O O O O O O O O O O O O O O O	3 s4 0 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 2 0 0 0 0 0 0 0 0	0 20.00 J s5 0.40 0.20 0.30 0 1.00	1.00 0 1 K Solution 3,100.0 3,300.0 3,100.0 9,000.0 6,000.0	6,000.00 180,000.00 L Cal 00 = K45 - \$ 00 = K46 - \$ 00 = K47 - \$ 00 = K48 - \$ 00 = K50 - \$	=K41 - \$ M culation \$E45 * K\$58 \$E46 * K\$58 \$E47 * K\$58 \$E48 * K\$58	N C Rate 10,33 8,25 15,50
Basic s1 s2 s3 x1 x2 z	0 1.00 C Make x2 ide 0 0 0 0 0 0 1.00 (see last state s2 leaves be 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0 0 0 0	1.00 -15.00 E x2 s 0 0 0 0 1.00 0 ratio used in x2 s 0	1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0	6 2 s 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 1 1 2 3 3 3 3 3 4 0 0 3 3 0 3 0 0 0 0 0 0 0 0	0 20.00 J s5 0.40 0.20 0.30 0 1.00 15.00	1.00	6,000.00 180,000.00 L Cal 00 = K45 - \$ 00 = K46 - \$ 00 = K48 - \$ 00 = K50 - \$ Cal	=K41 - \$ M culation \$645 * K\$58 \$646 * K\$58 \$647 * K\$58 \$648	N C Rat 10,33 8,25 15,50 9,00
Basic s1 s2 s3 x1 x2 z ii. Optimize Iteration 4: Basic s1 s4 F	0 1.00 C Make x2 ide 2 0 0 0 1.00 (see last state 2 0 0 0 0 1.00	0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0 0 0	1.00 -15.00 E x2 s 0 0 0 0 1.00 0 ratio used in x2 s 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1	G S2 s 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 s4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1 1 2 2 3 3 3 0 0 3 3 0 0 0 0 0 0 0 0 0 0 0	0 20.00 J s5 0.40 0.20 0.30 0 1.00 15.00	1.00 8 Solution 3,100.0 3,300.0 3,100.0 9,000.0 6,000.0 270,000.0 Solution 625.0 8,250.0	6,000.00 180,000.00 L Cal 00 = K45 - \$ 00 = K46 - \$ 00 = K48 - \$ 00 = K50 - \$ Cal 00 = K54 - \$ 00 = K55 / \$ 00 = K55	=K41 - \$ M Culation SE45 * K\$58 SE46 * K\$58 SE47 * K\$58 SE48 * K\$58 SE50	Rat 10,33 8,25 15,50 9,00 Rat 2,50 16,50
Basic s1 s2 s3 x1 x2 z ii. Optimize Iteration 4: Basic s1 s4 s3	0 1.00 C Make x2 ide 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0 0	1.00 -15.00 E x2 s 0 0 0 0 1.00 0 ratio used in x2 s 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1	G S2 s 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 s4 0 0 0 1.00 0 1.00	0 0 1 1 2 3 3 3 3 3 3 3 3 4 0 0 0 0 0 0 0 0 0 0 0	0 20.00 s5 0.40 0.20 0.30 0 1.00 15.00	1.00	6,000.00 180,000.00 L Cal 00 = K45 - \$ 00 = K46 - \$ 10 = K48 - \$ 10 = K50 - \$ Cal 00 = K56 - \$ 00 = K56 - \$	=K41 - \$ M Culation SE45 * K\$58 SE46 * K\$58 SE47 * K\$58 SE48 * K\$58 SE48 * K\$58 SE50 * K\$66 SE55 SE56 * K\$66 SE56	Rat 10,33 8,25 15,50 9,00 Rat 2,50
X2 Z	0 1.00 C Make x2 ide 2 0 0 0 0 0 1.00 (see last steel st	0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0 0	1.00 -15.00 E x2 s 0 0 0 0 1.00 0 ratio used in x2 s 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	G S2 S O 1.00 O O O O O O O O O O O O O O O O O O	3 s4 0 0 0 0 1.00 0 0 1.00 0 0 1.00 0	0 0 1 1 2 3 3 3 3 3 3 3 3 4 0 0 0 0 0 0 0 0 0 0 0	0 20.00 s5 0.40 0.20 0.30 0 1.00 15.00	1.00	6,000.00 180,000.00 L Cal 00 = K45 - \$ 00 = K46 - \$ 00 = K48 - \$ 00 = K50 - \$ Cal 00 = K56 - \$ 00 = K56 - \$ 00 = K57 - \$ 00 = K57 - \$	=K41 - \$ M Culation SE45 * K\$58 SE46 * K\$58 SE47 * K\$58 SE48 * K\$58 SE48 * K\$58 SE50 * K\$58 SE50 * K\$58 SE50 * K\$58 SE50 * K\$66 SE57 * K\$67 * C\$67	Rate 10,33 8,25 15,50 9,00 Rate 2,50 16,50 7,25
X2 Z Z	0 1.00 C Make x2 ide 2 0 0 0 0 0 0 1.00 (see last state 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0 0	1.00 -15.00 E x2 s 0 0 0 0 1.00 0 ratio used in x2 s 0 0 0 1.00 0 1.00 0 1.00	1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	G S2 S O 1.00 O O O O O O O O O O O O	3 s4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20.00 J s5 0.40 0.20 0.30 0 1.00 15.00 s5 0.25 0.20 -0.50 1.00	1.00 K Solution 3,100.0 3,300.0 9,000.0 6,000.0 270,000.0 Solution 625.0 8,250.0 1,450.0 750.0 6,000.0	6,000.00 180,000.00 L Cal 0 = K45 - \$ 0 = K46 - \$ 0 = K48 - \$ 0 = K50 - \$ Cal 0 = K56 - \$ 0 = K56 - \$ 0 = K57 - \$ 0 = K58 - \$	=K41 - \$ M Culation SE45 * K\$58 SE46 * K\$58 SE47 * K\$58 SE48 * K\$58 SE48 * K\$58 SE50 * K\$58 SE50 * K\$58 SE50 * K\$66 SE57 * K\$66 SE58	Rat 10,33 8,25 15,50 9,00 Rat 2,50 16,50
X2 Z	0 1.00 C Make x2 ide 2 0 0 0 0 0 1.00 (see last steel st	0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0 0	1.00 -15.00 E x2 s 0 0 0 0 1.00 0 ratio used in x2 s 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	G S2 S O 1.00 O O O O O O O O O O O O O O O O O O	3 s4 0 0 0 0 1.00 0 0 1.00 0 0 1.00 0	0 0 1 1 2 3 3 3 3 3 3 3 3 4 0 0 0 0 0 0 0 0 0 0 0	0 20.00 s5 0.40 0.20 0.30 0 1.00 15.00 s5 0.25 0.20 -0.50 1.00	1.00	6,000.00 180,000.00 L Cal 0 = K45 - \$ 0 = K46 - \$ 0 = K48 - \$ 0 = K50 - \$ Cal 0 = K56 - \$ 0 = K56 - \$ 0 = K57 - \$ 0 = K58 - \$	=K41 - \$ M Culation SE45 * K\$58 SE46 * K\$58 SE47 * K\$58 SE48 * K\$58 SE48 * K\$58 SE50 * K\$58 SE50 * K\$58 SE50 * K\$58 SE50 * K\$66 SE57 * K\$67 * C\$67	Rate 10,33 8,25 15,50 9,00 Rate 2,50 16,50 7,25
X2 Z	0 1.00 C Make x2 ide 2 0 0 0 1.00 (see last state 2 0 0 0 1.00 state leaves be 2 1.00 state leaves be 3 1.00	0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 1.00 0 0 0	1.00 -15.00 E x2 s 0 0 0 1.00 0 ratio used in x2 s 0 0 0 1.00 0 0 1.00 0 0 0 0 0 0 0 0 0 0	1 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6	3 s4 0 0 1.00 0 0 1.00 0 0 1.00 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20.00 s5 0.40 0.20 0.30 0 1.00 15.00 s5 0.25 0.20 -0.50 1.00 5.00	1.00 K Solution 3,100.0 3,300.0 6,000.0 270,000.0 Solution 625.0 750.0 6,000.0 105,000.0	6,000.00 180,000.00 L Cal 00 = K45 - \$ 00 = K46 - \$ 00 = K47 - \$ 00 = K50 - \$ 00 = K56 - \$ 00 = K57 - \$ 00 = K57 - \$ 00 = K57 - \$ 00 = K59 - \$	=K41 - \$ M Culation SE45 * K\$58 SE46 * K\$58 SE47 * K\$58 SE48 * K\$58 SE50 * K\$58 SE50 * K\$58 SE50 * K\$66	Rate 10,33 8,25 15,50 9,00 Rate 2,50 16,50 7,25
X2 Z B	0 1.00 C Make x2 ide 0 0 0 0 1.00 (see last state 2 0 0 0 1.00 1.00 state leaves be 2 1.00 state leaves be 2	0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 1.00 0 0 0	1.00 -15.00 E x2 s 0 0 0 1.00 0 ratio used in x2 s 0 0 0 1.00 0 0 1.00 0 0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6	3 s4 0 0 1.00 0 0 1.00 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20.00 J s5 0.40 0.20 0 15.00 15.00	1.00	6,000.00 180,000.00 L Cal 0 = K45 - \$ 0 = K46 - \$ 0 = K47 - \$ 0 = K48 - \$ 0 = K50 - \$ Cal 0 = K56 - \$ 0 = K57 - \$ 0 = K59 - \$ Cal	=K41 - \$ M Culation \$645 * K\$58 \$646 * K\$58 \$646 * K\$58 \$647 * K\$58 \$648 * K\$58 \$648 * K\$58 \$648 * K\$58 \$649 * K\$66 \$655 * K\$66 \$657	Rate 10,33 8,25 15,50 9,00 Rate 2,50 16,50 7,25
X2 Z	0 1.00 C Make x2 ide 2 0 0 0 1.00 (see last state 2 0 0 0 1.00 state leaves be 2 1.00 state leaves be 3 1.00	0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 1.00 0 0 0	1.00 -15.00 E x2 s 0 0 0 1.00 0 ratio used in x2 s 0 0 1.00 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6	3 s4 0 0 0 1.00 0 0 1.00 0 0 1.00 0 0 3 s4	0 0 0 1 0,30 0,20 1,00 0 0 0 0 0	0 20.00 s5 0.40 0.20 0.30 0 1.00 15.00 s5 0.25 0.20 -0.50 1.00 5.00	1.00 K Solution 3,100.0 3,300.0 6,000.0 270,000.0 Solution 625.0 750.0 6,000.0 105,000.0	6,000.00 180,000.00 L Cal 0 = K45 - \$ 0 = K46 - \$ 0 = K47 - \$ 0 = K48 - \$ 0 = K50 - \$ Cal 0 = K56 - \$ 0 = K57 - \$ 0 = K59 - \$ Cal 0 = K65 / \$ Cal	=K41 - \$ M Culation \$645 * K\$58 \$646 * K\$58 \$646 * K\$58 \$647 * K\$58 \$648 * K\$58 \$648 * K\$58 \$648 * K\$58 \$649 * K\$66 \$655 * K\$66 \$657	Rate 10,33 8,25 15,50 9,00 Rate 2,50 16,50 7,25
X2 Z	0 1.00 C Make x2 ide 0 0 0 0 1.00 (see last state 2 0 0 0 1.00 1.00 s1 leaves be 2 0	0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 1.00 0 0 0	1.00 -15.00 E x2 s 0 0 0 1.00 0 ratio used in x2 s 0 0 1.00 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0	1	6	3 s4 0 0 0 1.00 0 0 1.00 0 0 1.00 0 0 3 s4	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20.00 J s5 0.40 0.20 0.30 0 1.00 15.00 s5 0.25 0.20 -0.50 1.00 5.00	1.00	6,000.00 180,000.00 L Cal 0 = K45 - \$ 0 = K46 - \$ 0 = K47 - \$ 0 = K48 - \$ 0 = K50 - \$ Cal 0 = K56 - \$ 0 = K59 - \$ Cal 0 = K66 - \$ 0 = K66 - \$ 0 = K66 - \$	=K41 - \$ M Culation SE45 * K\$58 SE46 * K\$58 SE47 * K\$58 SE48 * K\$58 SE48 * K\$58 SE50 * K\$58 SE50 * K\$58 SE50 * K\$66 SE50 * K\$60 SE50	Rate 10,33 8,25 15,50 9,00 Rate 2,50 16,50 7,25
X2 Z	0 1.00 C Make x2 ide 2 0 0 0 0 1.00 (see last state 2 0 0 0 1.00 st leaves be 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0 1.00 0 0 0	1.00 -15.00 E x2 s 0 0 0 1.00 0 ratio used in x2 s 0 0 1.00 0 1.00 0 0 0 0 0 0 0 0 0 0 0 0	1	6	3 s4 0 0 1.00 0 0 1.00 0 0 0 1.00 0 0 0 1.00 0 0 0 0 0 0 0 0 0 0 0	0 0 0 1 0 0,30 0 0 0 0 0 0 0 0 0 0 0 0	0 20.00 J s5 0.40 0.20 0.30 0 1.00 15.00 s5 0.25 0.20 -0.50 1.00 5.00	1.00	6,000.00 180,000.00 L Cal 00 = K45 - \$ 100 = K46 - \$ 100 = K47 - \$ 100 = K50 - \$ 100 = K50 - \$ 100 = K56 - \$ 100 = K57 - \$ 100 = K65 / \$ 100 = K65 / \$ 100 = K67 - \$ 100 = K	=K41 - \$ M Culation \$645 * K\$58 \$646 * K\$58 \$646 * K\$58 \$647 * K\$58 \$647 * K\$58 \$647 * K\$58 \$647 * K\$66 \$657	Rate 10,33 8,25 15,50 9,00 Rate 2,50 16,50 7,25
X2 Z	0 1.00 C Make x2 ide 2 0 0 0 0 1.00 (see last state 2 0 0 0 1.00 s1 leaves be 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 1.00 0 0 0	1.00 -15.00 E x2	1	62 s 0 1.00 0 0 0 0 0 4) 52 s -0.75 2.50 -0.50 -2.50 0 50.00 52 s -3.00 4.00 0.10 -4.00 3.00	3 s4 0 0 1.00 0 0 1.00 0 0 1.00 0 0 1.00 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20.00 J s5 0.40 0.20 0.30 15.00 15.00 s5 0.25 0.20 -0.50 1.00 5.00 0 0 0	1.00 K Solution 3,100.0 3,300.0 3,100.0 9,000.0 6,000.0 270,000.0 Solution 1,450.0 750.0 6,000.0 105,000.0 Solution 2,500.0 7,000.0 950.0 2,000.0 3,500.0	6,000.00 180,000.00 L Cal 0 = K45 - \$ 0 = K46 - \$ 0 = K47 - \$ 0 = K48 - \$ 0 = K50 - \$ Cal 0 = K56 - \$ 0 = K57 - \$ 0 = K57 - \$ 0 = K66 - \$ 0 = K67 -	=K41 - \$ M Culation \$645 * K\$58 \$646 * K\$66 \$657 * K\$74 \$667 * K\$74 \$668	Rate 10,33 8,25 15,50 9,00 Rate 2,50 16,50 7,25
X2 Z	0 1.00 C Make x2 ide 2 0 0 0 0 1.00 (see last state 2 0 0 0 1.00 s1 leaves be 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 1.00 0 0 0 0 0 0	1.00 -15.00 E x2	1	62 s 0 1.00 0 0 0 0 0 44) 52 s -0.75 2.50 -0.50 -2.50 0 50.00 52 s -3.00 4.00 0.10 -4.00	3 s4 0 0 1.00 0 0 1.00 0 0 1.00 0 1.00 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 20.00 J s5 0.40 0.20 0.30 0 1.00 15.00 s5 0.25 0.50 0.20 -0.50 1.00 5.00	1.00	6,000.00 180,000.00 L Cal 0 = K45 - \$ 0 = K46 - \$ 0 = K47 - \$ 0 = K48 - \$ 0 = K50 - \$ Cal 0 = K56 - \$ 0 = K57 - \$ 0 = K57 - \$ 0 = K66 - \$ 0 = K67 -	=K41 - \$ M Culation SE45 * K\$58 SE46 * K\$58 SE47 * K\$58 SE48 * K\$58 SE48 * K\$58 SE50 * K\$58 SE50 * K\$58 SE50 * K\$66 SE57 * K\$74 SE67 * K\$74 SE68	Rate 10,33 8,25 15,50 9,00 Rate 2,50 16,50 7,25

R1		Setup		•						B4					
R3															Ratio 5,000.
R3															7,500.
SA															1,666.
SS 0 0 1,000 0 0 0 0 0 0 0 0 0															2,000.
TIFE 2: R3 leaves basis, x2 enters									1.000						6,000
Basis z x1	Z	1	0	0	0	0	0	0	0	М	М	M	0		
Basis z x1	ITED 2. I	02 lagues	basis v2 antar												
R1					S1	S2	S3	S4	S5	R1	R2	R3	Solution	Calculation	Ratio
X2	R1	0	0.033	0	-1.000	0	1.333	0	0	1.000	0		1,333.33		1,000.
S4	R2	0	0.267	0	0	-1.000	0.667	0	0	0	1.000		1,166.67	=N7 - \$E7 * N\$18	1,750.
S5	x2	0	0.667	1.000	0	0	-3.333	0	0	0	0		1,666.67	=N8 / \$E8	
TIER 3: R5 leaves basis, s1 enters	S4		1.000	0	0	0	0	1.000	0	0	0		9,000.00	=N9 - \$E9 * N\$18	
Sail x x2 S1 S2 S3 S4 S5 R1 R2 R3 Solution Calculation	S5	0	-0.667	0	0	0	3.333	0	1.000	0	0		4,333.33	=N10 - \$E10 * N\$18	1,300
Basis z x1 x2 S1 S2 S3 S4 S5 R1 R2 R3 Solution Calculation	Z	1	0.3M+10	15.000	-M	-M	2M-50	0	0	M	M		0		
S3	ITER 3: F	R5 leaves	basis, s1 enter	s											
R2	Basis	Z	x1	x2	S1	S2	S3	S4	S5	R1	R2	R3	Solution	<u>Calculation</u>	Ratio
X2	S3	0	0.025	0	-0.750	0	1.000	0	0		0		1,000.00	=N16/\$H16	
S4	R2												500.00	=N17 - \$H17 * N\$25	1,000.
SS 0 -0.750 0 2.500 0 0 0 0 1.000 0 1,000.00 =N20 - \$H20 * N\$25	x2	0	0.750		-2.500			0	0				5,000.00	=N18 - \$H18 * N\$25	
Z 1 0.25M+11.25 15.000 0.5M-37.5 -M 0 0 0 M 0 B C D E F G H I J K L M N O P Q ITER 4: R2 leaves basis, x1 enters Basis z x1 x2 S1 S2 S3 S4 S5 R1 R2 R3 Solution Calculation I S3 0 -0.200 0 0 1.000 0 0.300 0 1,300.00 =N25 - \$F25 * N\$38 x1 0 0.400 0 0 -1.000 0 0 0.200 1.000 300.00 =N25 - \$F25 * N\$38 0 x2 0 0 1.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0															
B				0	2.500	0		0					1,000.00	=N20 - \$H20 * N\$25	400
Sais z x1 x2 S1 S2 S3 S4 S5 R1 R2 R3 Solution Calculation S3 O -0.200 O O 0 0 0 0 0 0 0	Z	1 0	.25M+11.25	15.000 0	.5M-37.5	-M	0	0	0		M		0		
Basis z x1 x2 S1 S2 S3 S4 S5 R1 R2 R3 Solution Calculation Calculation S3 0 -0.200 0 0 1.000 0 1,300.00 =N25 - \$F25 * N\$38 x1 0 0.400 0 0 -0.200 1.000 300.00 =N26 - \$F26 * N\$38 x2 0 0 1.000 0 0 6,000.00 =N27 - \$F27 * N\$38 S4 0 1.000 0 0 0 0 9,000.00 =N27 - \$F27 * N\$38 9 S5 0 -0.300 0 1.000 0 0 9,000.00 =N27 - \$F27 * N\$38 9 Z 1 0.4M 15.000 0 0 0 0 0 0 0 9,000.00 =N28 - \$F28 * N\$38 9 9 0 -N29 / \$F\$29 2 1 0 0 0 0 0 0 0 0	В	С	D	E	F	G	Н	1	J	K	L	М	N (D P Q	R
Basis z x1 x2 S1 S2 S3 S4 S5 R1 R2 R3 Solution Calculation Calculation S3 0 -0.200 0 0 1.000 0 1,300.00 =N25 - \$F25 * N\$38 x1 0 0.400 0 0 -0.200 1.000 300.00 =N26 - \$F26 * N\$38 x2 0 0 1.000 0 0 6,000.00 =N27 - \$F27 * N\$38 S4 0 1.000 0 0 0 0 9,000.00 =N27 - \$F27 * N\$38 9 S5 0 -0.300 0 1.000 0 0 9,000.00 =N27 - \$F27 * N\$38 9 Z 1 0.4M 15.000 0 0 0 0 0 0 0 9,000.00 =N28 - \$F28 * N\$38 9 9 0 -N29 / \$F\$29 2 1 0 0 0 0 0 0 0 0	ITER 4: R.	2 leaves	basis, x1 enters	5											
x1 0 0.400 0 0 -1.000 0 0 -0.200 1.000 300.00 =N26 - \$F26 * N\$38 x2 0 0 1.000 0 0 0 6,000.00 =N27 - \$F27 * N\$38 S4 0 1.000 0 0 0 0 9,000.00 =N27 - \$F27 * N\$38 9 S5 0 -0.300 0 1.000 0 0 0 9,000.00 =N28 - \$F28 * N\$38 9 Z 1 0.4M 15.000 0 -M 0 0 0.400 0 400.00 =N29 / \$F\$29 Z 1 0.4M 15.000 0 -M 0 0 -0.2M+15 M 0 ITER 5: \$1 leaves basis, \$5 enters Basis z x1 x2 \$1 \$2 \$3 \$4 \$5 R1 R2 R3 \$Olution =N34 - \$D34 * N\$44 7	Basis	Z	x1	x2	S1	S2	S3	S4	S5	R1	R2	R3	Solution	<u>Calculation</u>	Ratio
x2 0 0 1.000 0 0 1.000 0 6,000.00 =N27 - \$F27 * N\$38 9 \$4 0 1.000 0 0 0 0 9,000.00 =N28 - \$F28 * N\$38 9 \$5 0 -0.300 0 1.000 0 0 0.400 0 400.00 =N29 / \$F\$29 0 \$Z 1 0.4M 15.000 0 -M 0 0 -0.2M+15 M 0 ITER 5: \$1 leaves basis, \$5 enters Basis 2 x1 x2 \$51 \$52 \$53 \$54 \$55 \$R1 \$R2 \$R3 \$50lution Edulation =N34 - \$D34 * N\$44 7	S3											į			
S4 0 1.000 0 0 0 1.000 0 9,000.00 =N28 - \$F28 * N\$38 9 S5 0 -0.300 0 1.000 0 0 0.400 0 400.00 =N29 / \$F\$29 Z 1 0.4M 15.000 0 -M 0 0 -0.2M+15 M 0 ITER 5: S1 leaves basis, s5 enters Basis z x1 x2 \$1 \$2 \$3 \$4 \$5 R1 R2 R3 Solution Calculation -8/34 - \$D34 * N\$44 7 S3 0 0 0 -0.500 1.000 0 0.200 1,450.00 =N34 - \$D34 * N\$44 7													300.00		750.
S5 0 -0.300 0 1.000 0 0 0 0.400 0 400.00 =N29 / \$F\$29 Z 1 0.4M 15.000 0 -M 0 0 -0.2M+15 M 0 ITER 5: \$1 leaves basis, s5 enters Basis z x1 x2 \$1 \$2 \$3 \$4 \$5 R1 R2 R3 \$olution Calculation I S3 0 0 0 0 -0.500 1.000 0 0.200 1,450.00 =N34 - \$D34 * N\$44 7															
Z 1 0.4M 15.000 0 -M 0 0 -0.2M+15 M 0 ITER 5: S1 leaves basis, s5 enters Basis z x1 x2 S1 S2 S3 S4 S5 R1 R2 R3 Solution Calculation I S3 0 0 0 0 -0.500 1.000 0 0.200 1,450.00 =N34 - \$D34 * N\$44 7															9,000.0
TTER 5: S1 leaves basis, s5 enters														=N29 / \$F\$29	
Basis z x1 x2 S1 S2 S3 S4 S5 R1 R2 R3 Solution Calculation S3 0 0 0 0 -0.500 1.000 0 0.200 1,450.00 =N34 - \$D34 * N\$44 7	Z	1	0.4M	15.000	0	-M	0	0 -	0.2M+15		M		0		
S3 0 0 0 0 -0.500 1.000 0 0.200 1,450.00 =N34 - \$D34 * N\$44 7									1						
										K1	K2	K3			Ratio
X1 U 1.000 U U -2.500 U U -0.500 ! /50.00 =N35 / SD35															7,250.0
															6,000,0
	XZ														6,000.0 16,500.0
	S/I	U		_											2,500.0
Z 1 20.000 15.000 0 -50.000 0 0 5.000 105,000.00 =(N44 * D48) + (N45 * E48)	S4	0	(1)				U	U	0.230				023.00	- 14סטק - טטאו	۷,۵00.



	5 from Dr	oblem 2(b) <												
Basis	Z	x1	x2	S1	S2	S3	S4	S5	R1	R2	R3	Solution	Calculation	Ratio
S3	0	0	0	0	-0.500	1.000	0	0.200				1,450.00	='2(b)'!N43	7,250
x1	0	1.000	0	0	-2.500	0	0	-0.500				750.00	='2(b)'!N44	
x2	0	0	1.000	0	0	0	0	1.000				6,000.00	='2(b)'!N45	6,000
S4	0	0	0	0	2.500	0	1.000	0.500				8,250.00	='2(b)'!N46	16,500
s1	0	0	0	1.000	-0.750	0	0	0.250				625.00	='2(b)'!N47	2,500
31														
Z	1 S1/aguas	20.000	15.000	0	-50.000	0	0	5.000				105,000.00	='2(b)'!N48	
Z ITER 6: S	S1 leaves,	s5 enters		-					R1	R2	R3			
Z			15.000 x2	0 S1 -0.800	-50.000 S2 0.100	0 S3 1,000	0 S4	\$5.000 \$5	R1	R2	R3	105,000.00 Solution 950.00	='2(b)'!N48 <u>Calculation</u> =N6 - \$J6 * N\$20	
Z ITER 6: S Basis	S1 leaves,	s5 enters x1	x2	S1	S2	\$3	S4	\$5	R1	R2	R3	Solution	<u>Calculation</u>	
Z ITER 6: 5 Basis S3	S1 leaves, z	s5 enters x1	x2	S1 -0.800	S2 0.100	S3 1.000	S4	\$5 0	R1	R2	R3	Solution 950.00	<u>Calculation</u> =N6 - \$J6 * N\$20	
Z ITER 6: 3 Basis S3 x1	\$1 leaves, z 0 0 0 0	s5 enters x1 0 1.000 0	x2 0 0	S1 -0.800 2.000	S2 0.100 -4.000	\$3 1.000 0 0	\$4 0 0	S5 0 0	R1	R2	R3	Solution 950.00 2,000.00	<u>Calculation</u> =N6 - \$J6 * N\$20 =N7 - \$J7 * N\$20	
Z ITER 6: S Basis S3 x1 x2	S1 leaves, z 0 0	s5 enters x1 0 1.000	x2 0 0 1.000	S1 -0.800 2.000 -4.000	\$2 0.100 -4.000 3.000	\$3 1.000 0 0	\$4 0 0	\$5 0 0	R1	R2	R3	Solution 950.00 2,000.00 3,500.00	<u>Calculation</u> =N6 - \$J6 * N\$20 =N7 - \$J7 * N\$20 =N8 - \$J8 * N\$20	