

BUGSOFF CHEMICALS

NWCorner:

| | | K1= | K2= | K3= | K4= | K5= | |
|-----|--------|-----|--------------------|--------------------|--------------------|-----|--------------------|
| | Source | D1 | D2 | D3 | D4 | D5 | SUPPLY |
| R1= | S1 | 2 | 6 | 9 | 4 | | |
| | | 100 | 100 | | | | 200 100 |
| R2= | S2 | 7 | 1 | 10 | 12 | | |
| | | | 100 | 200 | | | 300 200 |
| R3= | S3 | 5 | 11 | 3 | 8 | | |
| | | | | 100 | 300 | | 400 300 |
| R4= | S4 | 0 | 0 | 0 | 0 | | |
| | | | | | 100 | | 100 |
| | DEMAND | 100 | 200 100 | 300 100 | 400 100 | | 1000 |

(a) Supply < Demand
Therefore, add a Dummy Row to make up for the difference of 100 units, & all costs = 0

Solution from NWCorner:

| | | |
|-----------|------------|-------------|
| S1 --> D1 | 100 @ \$2 | 200 |
| S1 --> D2 | 100 @ \$6 | 600 |
| S2 --> D2 | 100 @ \$1 | 100 |
| S2 --> D3 | 200 @ \$10 | 2000 |
| S3 --> D3 | 100 @ \$3 | 300 |
| S3 --> D4 | 300 @ \$8 | 2400 |
| | | <u>5600</u> |

MODI: 1st Iteration

| | | K1= | K2= | K3= | K4= | K5= | |
|-----|--------|-----|----------------|-------------|-------------|-----|--------|
| | Source | D1 | D2 | D3 | D4 | D5 | SUPPLY |
| R1= | S1 | 2 | 6 | 9 | 4 | | |
| 0 | | 100 | 100 | | -6 +100 -16 | | 200 |
| R2= | S2 | 7 | 1 | 10 | 12 | | |
| -5 | | | 100 +100 | 200 100 | | -3 | 300 |
| R3= | S3 | 5 | 11 | 3 | 8 | | |
| -12 | | | 15 | 17 100 +100 | 300 200 | | 400 |
| R4= | S4 | 0 | 0 | 0 | 0 | | |
| -20 | | | 18 | 14 | 5 100 | | 100 |
| | DEMAND | 100 | 200 | 300 | 400 | | 1000 |

2nd Iteration:

| | | K1= | K2= | K3= | K4= | K5= | |
|-----|--------|----------------|--------|-------------|----------|-----|--------|
| | Source | D1 | D2 | D3 | D4 | D5 | SUPPLY |
| R1= | S1 | 2 | 6 | 9 | 4 | | |
| 0 | | 100 | | 10 | 100 +100 | | 200 |
| R2= | S2 | 7 | 1 | 10 | 12 | | |
| 11 | | +100 | -6 200 | 100 | | -3 | 300 |
| R3= | S3 | 5 | 11 | 3 | 8 | | |
| 4 | | | -1 | 17 200 +100 | 200 100 | | 400 |
| R4= | S4 | 0 | 0 | 0 | 0 | | |
| -4 | | | 2 | 14 | 5 100 | | 100 |
| | DEMAND | 100 | 200 | 300 | 400 | | 1000 |

| | | K1= | K2= | K3= | K4= | K5= | |
|-----|--------|-----|-----|--------|-------|-----|--------|
| | Source | D1 | D2 | D3 | D4 | D5 | SUPPLY |
| R1= | S1 | 2 | 6 | 9 | 4 | | |
| 0 | | 0 | | 10 | 200 | | 200 |
| R2= | S2 | 7 | 1 | 10 | 12 | | |
| 5 | | 100 | 200 | 6 | | | 300 |
| R3= | S3 | 5 | 11 | 3 | 8 | | |
| 4 | | | -1 | 11 300 | 100 | | 400 |
| R4= | S4 | 0 | 0 | 0 | 0 | | |
| -4 | | | 2 | 8 | 5 100 | | 100 |
| | DEMAND | 100 | 200 | 300 | 400 | | 1000 |

STOP: Even tho' having a Negative Cell, but can't form closed loop

Solution from MODI:

| | | |
|-----------|-----------|-------------|
| S1 --> D4 | 200 @ \$4 | 800 |
| S2 --> D1 | 100 @ \$7 | 700 |
| S2 --> D2 | 200 @ \$1 | 200 |
| S3 --> D3 | 300 @ \$3 | 900 |
| S3 --> D4 | 100 @ \$8 | 800 |
| | | <u>3400</u> |