

```
Geonsikui-MacBook-Pro-2:IE535_Simplex geonsik$ python
model12_mySimplex.py
Initialize the given LP problem:
Initialize the zero-th row:
```

---

```
Current Basic Variables:  S1 S3 S2 A1 A2 A3
Current Objective Value: 100.0
x1  := 0.0
x2  := 0.0
x3  := 0.0
x4  := 0.0
x5  := 0.0
S1  := 40.0
S2  := 35.0
S3  := 25.0
S4  := 0.0
S5  := 0.0
S6  := 0.0
A1  := 40.0
A2  := 35.0
A3  := 25.0
TWO STEP METHOD CALLED:
```

---

```
Current Basic Variables:  S1 S3 S2 A1 A2 A3
Current Objective Value: 100.0
x1  := 0.0
x2  := 0.0
x3  := 0.0
x4  := 0.0
x5  := 0.0
S1  := 40.0
S2  := 35.0
S3  := 25.0
S4  := 0.0
S5  := 0.0
S6  := 0.0
A1  := 40.0
A2  := 35.0
A3  := 25.0
```

```
Run the 1st step of Two Step Method
```

---

```
Current Basic Variables:  S1 S3 S2 x5 A2 A3
Current Objective Value: 20.0
x1  := 0.0
x2  := 0.0
x3  := 0.0
x4  := 0.0
x5  := 0.8
S1  := 0.0
S2  := 3.0
S3  := 17.0
S4  := 0.0
S5  := 0.0
S6  := 0.0
```

A1 := 0.0  
A2 := 3.0  
A3 := 17.0

---

Current Basic Variables: S4 S3 S2 x5 A2 A3  
Current Objective Value: 20.0

x1 := 0.0  
x2 := 0.0  
x3 := 0.0  
x4 := 0.0  
x5 := 0.8  
S1 := 0.0  
S2 := 3.0  
S3 := 17.0  
S4 := 0.0  
S5 := 0.0  
S6 := 0.0  
A1 := 0.0  
A2 := 3.0  
A3 := 17.0

---

Current Basic Variables: S4 S3 S2 x5 x4 A3  
Current Objective Value: 14.705882352941176

x1 := 0.0  
x2 := 0.0  
x3 := 0.0  
x4 := 0.08823529411764706  
x5 := 0.7647058823529412  
S1 := 0.0  
S2 := 0.0  
S3 := 14.705882352941176  
S4 := 0.0  
S5 := 0.0  
S6 := 0.0  
A1 := 0.0  
A2 := 0.0  
A3 := 14.705882352941176

---

Current Basic Variables: S4 S3 S5 x5 x4 A3  
Current Objective Value: 14.705882352941176

x1 := 0.0  
x2 := 0.0  
x3 := 0.0  
x4 := 0.08823529411764706  
x5 := 0.7647058823529412  
S1 := 0.0  
S2 := 0.0  
S3 := 14.705882352941176  
S4 := 0.0  
S5 := 0.0  
S6 := 0.0  
A1 := 0.0  
A2 := 0.0  
A3 := 14.705882352941176

---

Current Basic Variables: S1 S3 S5 x5 x4 A3  
Current Objective Value: 14.705882352941176  
x1 := 0.0  
x2 := 0.0  
x3 := 0.0  
x4 := 0.08823529411764706  
x5 := 0.7647058823529412  
S1 := 0.0  
S2 := 0.0  
S3 := 14.705882352941176  
S4 := 0.0  
S5 := 0.0  
S6 := 0.0  
A1 := 0.0  
A2 := 0.0  
A3 := 14.705882352941176

---

Current Basic Variables: S1 S3 S5 x5 x4 x2  
Current Objective Value: -1.7763568394002505e-15  
x1 := 0.0  
x2 := 0.25  
x3 := 0.0  
x4 := 0.125  
x5 := 0.625  
S1 := 0.0  
S2 := 0.0  
S3 := 0.0  
S4 := 0.0  
S5 := 0.0  
S6 := 0.0  
A1 := 0.0  
A2 := 0.0  
A3 := 0.0

- Terminate Procedure: Optimal Value = -1.7763568394002505e-15

---

Current Basic Variables: S1 S3 S5 x5 x4 x2  
Current Objective Value: -1.7763568394002505e-15  
x1 := 0.0  
x2 := 0.25  
x3 := 0.0  
x4 := 0.125  
x5 := 0.625  
S1 := 0.0  
S2 := 0.0  
S3 := 0.0  
S4 := 0.0  
S5 := 0.0  
S6 := 0.0  
A1 := 0.0  
A2 := 0.0  
A3 := 0.0

Run the Vanilla Simplex Method or the 2st step of Two Step Method  
Initialize the zero-th row:

---

Current Basic Variables: S1 S3 S5 x5 x4 x2  
Current Objective Value: 22.5  
x1 := 0.0  
x2 := 0.25  
x3 := 0.0  
x4 := 0.125  
x5 := 0.625  
S1 := 0.0  
S2 := 0.0  
S3 := 0.0  
S4 := 0.0  
S5 := 0.0  
S6 := 0.0

---

Current Basic Variables: S1 S3 S2 x5 x4 x2  
Current Objective Value: 22.5  
x1 := 0.0  
x2 := 0.25  
x3 := 0.0  
x4 := 0.125  
x5 := 0.625  
S1 := 0.0  
S2 := 0.0  
S3 := 0.0  
S4 := 0.0  
S5 := 0.0  
S6 := 0.0

---

Current Basic Variables: S1 S3 S2 x5 x3 x2  
Current Objective Value: 21.599999999999998  
x1 := 0.0  
x2 := 0.3  
x3 := 0.5  
x4 := 0.0  
x5 := 0.19999999999999996  
S1 := 0.0  
S2 := 0.0  
S3 := 0.0  
S4 := 0.0  
S5 := 0.0  
S6 := 0.0

---

Current Basic Variables: S1 S3 S2 x1 x3 x2  
Current Objective Value: 21.130434782608692  
x1 := 0.0434782608695652  
x2 := 0.2826086956521739  
x3 := 0.6739130434782608  
x4 := 0.0  
x5 := 0.0  
S1 := 0.0  
S2 := 0.0  
S3 := 0.0  
S4 := 0.0

```
S5 := 0.0
S6 := 0.0
```

---

```
Current Basic Variables: S1 S3 S2 x1 x3 x4
Current Objective Value: 20.812499999999996
```

```
x1 := 0.34374999999999994
x2 := 0.0
x3 := 0.24999999999999978
x4 := 0.40625
x5 := 0.0
S1 := 0.0
S2 := 0.0
S3 := 0.0
S4 := 0.0
S5 := 0.0
S6 := 0.0
```

```
- Terminate Procedure: Optimal Value = 20.812499999999996
```

---

```
Current Basic Variables: S1 S3 S2 x1 x3 x4
Current Objective Value: 20.812499999999996
```

```
x1 := 0.34374999999999994
x2 := 0.0
x3 := 0.24999999999999978
x4 := 0.40625
x5 := 0.0
S1 := 0.0
S2 := 0.0
S3 := 0.0
S4 := 0.0
S5 := 0.0
S6 := 0.0
```

```
Geonsikui-MacBook-Pro-2:IE535_Simplex geonsik$ python
model27_mySimplex_Q1.py
Initialize the given LP problem:
Initialize the zero-th row:
```

---

```
Current Basic Variables: A3 A8 A9 A1 S4 S6 A4 A5 A6 A7 S8 S18 A10
S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14
Current Objective Value: 35.500000000000301
```

```
b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 0.0
x4 := 0.0
x5 := 0.0
x6 := 0.0
x7 := 0.0
x8 := 0.0
x9 := 0.0
x10 := 0.0
x11 := 0.0
```

```

x12 := 0.0
S1 := 0.0
S2 := 1.0
S3 := 0.0
S4 := 2.1
S5 := 0.0
S6 := 3.7
S7 := 0.0
S8 := 4.2
S9 := 0.0
S10 := 4.3
S11 := 0.0
S12 := 4.4
S13 := 0.0
S14 := 4.3
S15 := 0.0
S16 := 4.2
S17 := 0.0
S18 := 3.6
S19 := 0.0
S20 := 2.7
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 1.0
A2 := 2.1
A3 := 3.7
A4 := 4.2
A5 := 4.3
A6 := 4.4
A7 := 4.3
A8 := 4.2
A9 := 3.6
A10 := 2.7
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

TWO STEP METHOD CALLED:

---

Current Basic Variables: A3 A8 A9 A1 S4 S6 A4 A5 A6 A7 S8 S18 A10  
S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14

Current Objective Value: 35.500000000000301

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 0.0
x4 := 0.0
x5 := 0.0
x6 := 0.0
x7 := 0.0
x8 := 0.0

```

```

x9 := 0.0
x10 := 0.0
x11 := 0.0
x12 := 0.0
S1 := 0.0
S2 := 1.0
S3 := 0.0
S4 := 2.1
S5 := 0.0
S6 := 3.7
S7 := 0.0
S8 := 4.2
S9 := 0.0
S10 := 4.3
S11 := 0.0
S12 := 4.4
S13 := 0.0
S14 := 4.3
S15 := 0.0
S16 := 4.2
S17 := 0.0
S18 := 3.6
S19 := 0.0
S20 := 2.7
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 1.0
A2 := 2.1
A3 := 3.7
A4 := 4.2
A5 := 4.3
A6 := 4.4
A7 := 4.3
A8 := 4.2
A9 := 3.6
A10 := 2.7
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

Run the 1st step of Two Step Method

---

```

Current Basic Variables:  A3 A8 A9 A1 S4 S6 A4 A5 A6 A7 S8 S18 x12
S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14
Current Objective Value: 32.800000000000301
b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 0.0
x4 := 0.0
x5 := 0.0

```

```

x6  := 0.0
x7  := 0.0
x8  := 0.0
x9  := 0.0
x10 := 0.0
x11 := 0.0
x12 := 2.7
S1  := 0.0
S2  := 1.0
S3  := 0.0
S4  := 2.1
S5  := 0.0
S6  := 3.7
S7  := 0.0
S8  := 4.2
S9  := 0.0
S10 := 4.3
S11 := 0.0
S12 := 4.4
S13 := 0.0
S14 := 4.3
S15 := 0.0
S16 := 4.2
S17 := 0.0
S18 := 3.6
S19 := 0.0
S20 := 5.4
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1  := 1.0
A2  := 2.1
A3  := 3.7
A4  := 4.2
A5  := 4.3
A6  := 4.4
A7  := 4.3
A8  := 4.2
A9  := 3.6
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

```

Current Basic Variables:  A3 A8 x11 A1 S4 S6 A4 A5 A6 A7 S8 S18 x12
S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14

```

```

Current Objective Value: 29.200000000000301

```

```

b0  := 0.0
b1  := 0.0
b2  := 0.0
x3  := 0.0

```



```

x4  := 0.0
x5  := 0.0
x6  := 0.0
x7  := 0.0
x8  := 0.0
x9  := 0.0
x10 := 0.0
x11 := 3.6
x12 := 2.7
S1  := 0.0
S2  := 1.0
S3  := 0.0
S4  := 2.1
S5  := 0.0
S6  := 3.7
S7  := 0.0
S8  := 4.2
S9  := 0.0
S10 := 4.3
S11 := 0.0
S12 := 4.4
S13 := 0.0
S14 := 4.3
S15 := 0.0
S16 := 4.2
S17 := 0.0
S18 := 7.2
S19 := 0.0
S20 := 5.4
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1  := 1.0
A2  := 2.1
A3  := 3.7
A4  := 4.2
A5  := 4.3
A6  := 4.4
A7  := 4.3
A8  := 4.2
A9  := 0.0
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

```

Current Basic Variables:  A3 x10 x11 A1 S4 S6 A4 A5 A6 A7 S8 S18 x12
S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14
Current Objective Value: 25.000000000000301
b0  := 0.0
b1  := 0.0

```

```

b2 := 0.0
x3 := 0.0
x4 := 0.0
x5 := 0.0
x6 := 0.0
x7 := 0.0
x8 := 0.0
x9 := 0.0
x10 := 4.2
x11 := 3.6
x12 := 2.7
S1 := 0.0
S2 := 1.0
S3 := 0.0
S4 := 2.1
S5 := 0.0
S6 := 3.7
S7 := 0.0
S8 := 4.2
S9 := 0.0
S10 := 4.3
S11 := 0.0
S12 := 4.4
S13 := 0.0
S14 := 4.3
S15 := 0.0
S16 := 8.4
S17 := 0.0
S18 := 7.2
S19 := 0.0
S20 := 5.4
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 1.0
A2 := 2.1
A3 := 3.7
A4 := 4.2
A5 := 4.3
A6 := 4.4
A7 := 4.3
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

```

Current Basic Variables:  A3 x10 x11 A1 S4 S6 A4 A5 A6 x9 S8 S18 x12
S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14
Current Objective Value:  20.700000000000301

```

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 0.0
x4 := 0.0
x5 := 0.0
x6 := 0.0
x7 := 0.0
x8 := 0.0
x9 := 4.3
x10 := 4.2
x11 := 3.6
x12 := 2.7
S1 := 0.0
S2 := 1.0
S3 := 0.0
S4 := 2.1
S5 := 0.0
S6 := 3.7
S7 := 0.0
S8 := 4.2
S9 := 0.0
S10 := 4.3
S11 := 0.0
S12 := 4.4
S13 := 0.0
S14 := 8.6
S15 := 0.0
S16 := 8.4
S17 := 0.0
S18 := 7.2
S19 := 0.0
S20 := 5.4
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 1.0
A2 := 2.1
A3 := 3.7
A4 := 4.2
A5 := 4.3
A6 := 4.4
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

Current Basic Variables: A3 x10 x11 A1 S4 S6 A4 A5 x8 x9 S8 S18 x12

S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14  
Current Objective Value: 16.30000000000301

b0 := 0.0  
b1 := 0.0  
b2 := 0.0  
x3 := 0.0  
x4 := 0.0  
x5 := 0.0  
x6 := 0.0  
x7 := 0.0  
x8 := 4.4  
x9 := 4.3  
x10 := 4.2  
x11 := 3.6  
x12 := 2.7  
S1 := 0.0  
S2 := 1.0  
S3 := 0.0  
S4 := 2.1  
S5 := 0.0  
S6 := 3.7  
S7 := 0.0  
S8 := 4.2  
S9 := 0.0  
S10 := 4.3  
S11 := 0.0  
S12 := 8.8  
S13 := 0.0  
S14 := 8.6  
S15 := 0.0  
S16 := 8.4  
S17 := 0.0  
S18 := 7.2  
S19 := 0.0  
S20 := 5.4  
S21 := 0.0  
S22 := 0.0  
S23 := 0.0  
S24 := 1.0  
S25 := 0.0  
A1 := 1.0  
A2 := 2.1  
A3 := 3.7  
A4 := 4.2  
A5 := 4.3  
A6 := 0.0  
A7 := 0.0  
A8 := 0.0  
A9 := 0.0  
A10 := 0.0  
A11 := 1e-12  
A12 := 1e-12  
A13 := 1e-12  
A14 := 1.0

-----  
Current Basic Variables: A3 x10 x11 A1 S4 S6 A4 x7 x8 x9 S8 S18 x12  
S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14

Current Objective Value: 12.000000000000301

b0 := 0.0  
b1 := 0.0  
b2 := 0.0  
x3 := 0.0  
x4 := 0.0  
x5 := 0.0  
x6 := 0.0  
x7 := 4.3  
x8 := 4.4  
x9 := 4.3  
x10 := 4.2  
x11 := 3.6  
x12 := 2.7  
S1 := 0.0  
S2 := 1.0  
S3 := 0.0  
S4 := 2.1  
S5 := 0.0  
S6 := 3.7  
S7 := 0.0  
S8 := 4.2  
S9 := 0.0  
S10 := 8.6  
S11 := 0.0  
S12 := 8.8  
S13 := 0.0  
S14 := 8.6  
S15 := 0.0  
S16 := 8.4  
S17 := 0.0  
S18 := 7.2  
S19 := 0.0  
S20 := 5.4  
S21 := 0.0  
S22 := 0.0  
S23 := 0.0  
S24 := 1.0  
S25 := 0.0  
A1 := 1.0  
A2 := 2.1  
A3 := 3.7  
A4 := 4.2  
A5 := 0.0  
A6 := 0.0  
A7 := 0.0  
A8 := 0.0  
A9 := 0.0  
A10 := 0.0  
A11 := 1e-12  
A12 := 1e-12

A13 := 1e-12  
A14 := 1.0

---

Current Basic Variables: A3 x10 x11 A1 S4 S6 x6 x7 x8 x9 S8 S18 x12  
S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14

Current Objective Value: 7.8000000000003009

b0 := 0.0  
b1 := 0.0  
b2 := 0.0  
x3 := 0.0  
x4 := 0.0  
x5 := 0.0  
x6 := 4.2  
x7 := 4.3  
x8 := 4.4  
x9 := 4.3  
x10 := 4.2  
x11 := 3.6  
x12 := 2.7  
S1 := 0.0  
S2 := 1.0  
S3 := 0.0  
S4 := 2.1  
S5 := 0.0  
S6 := 3.7  
S7 := 0.0  
S8 := 8.4  
S9 := 0.0  
S10 := 8.6  
S11 := 0.0  
S12 := 8.8  
S13 := 0.0  
S14 := 8.6  
S15 := 0.0  
S16 := 8.4  
S17 := 0.0  
S18 := 7.2  
S19 := 0.0  
S20 := 5.4  
S21 := 0.0  
S22 := 0.0  
S23 := 0.0  
S24 := 1.0  
S25 := 0.0  
A1 := 1.0  
A2 := 2.1  
A3 := 3.7  
A4 := 0.0  
A5 := 0.0  
A6 := 0.0  
A7 := 0.0  
A8 := 0.0  
A9 := 0.0  
A10 := 0.0

A11 := 1e-12  
A12 := 1e-12  
A13 := 1e-12  
A14 := 1.0

-----  
Current Basic Variables: x5 x10 x11 A1 S4 S6 x6 x7 x8 x9 S8 S18 x12  
S2 A2 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14

Current Objective Value: 4.100000000003009

b0 := 0.0  
b1 := 0.0  
b2 := 0.0  
x3 := 0.0  
x4 := 0.0  
x5 := 3.7  
x6 := 4.2  
x7 := 4.3  
x8 := 4.4  
x9 := 4.3  
x10 := 4.2  
x11 := 3.6  
x12 := 2.7  
S1 := 0.0  
S2 := 1.0  
S3 := 0.0  
S4 := 2.1  
S5 := 0.0  
S6 := 7.4  
S7 := 0.0  
S8 := 8.4  
S9 := 0.0  
S10 := 8.6  
S11 := 0.0  
S12 := 8.8  
S13 := 0.0  
S14 := 8.6  
S15 := 0.0  
S16 := 8.4  
S17 := 0.0  
S18 := 7.2  
S19 := 0.0  
S20 := 5.4  
S21 := 0.0  
S22 := 0.0  
S23 := 0.0  
S24 := 1.0  
S25 := 0.0  
A1 := 1.0  
A2 := 2.1  
A3 := 0.0  
A4 := 0.0  
A5 := 0.0  
A6 := 0.0  
A7 := 0.0  
A8 := 0.0

A9 := 0.0  
A10 := 0.0  
A11 := 1e-12  
A12 := 1e-12  
A13 := 1e-12  
A14 := 1.0

-----  
Current Basic Variables: x5 x10 x11 A1 S4 S6 x6 x7 x8 x9 S8 S18 x12  
S2 x4 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14  
Current Objective Value: 2.0000000000030087

b0 := 0.0  
b1 := 0.0  
b2 := 0.0  
x3 := 0.0  
x4 := 2.1  
x5 := 3.7  
x6 := 4.2  
x7 := 4.3  
x8 := 4.4  
x9 := 4.3  
x10 := 4.2  
x11 := 3.6  
x12 := 2.7  
S1 := 0.0  
S2 := 1.0  
S3 := 0.0  
S4 := 4.2  
S5 := 0.0  
S6 := 7.4  
S7 := 0.0  
S8 := 8.4  
S9 := 0.0  
S10 := 8.6  
S11 := 0.0  
S12 := 8.8  
S13 := 0.0  
S14 := 8.6  
S15 := 0.0  
S16 := 8.4  
S17 := 0.0  
S18 := 7.2  
S19 := 0.0  
S20 := 5.4  
S21 := 0.0  
S22 := 0.0  
S23 := 0.0  
S24 := 1.0  
S25 := 0.0  
A1 := 1.0  
A2 := 0.0  
A3 := 0.0  
A4 := 0.0  
A5 := 0.0  
A6 := 0.0



A7 := 0.0  
 A8 := 0.0  
 A9 := 0.0  
 A10 := 0.0  
 A11 := 1e-12  
 A12 := 1e-12  
 A13 := 1e-12  
 A14 := 1.0

---

Current Basic Variables: x5 x10 x11 x3 S4 S6 x6 x7 x8 x9 S8 S18 x12  
 S2 x4 S12 S16 S10 S14 A13 A12 S20 S24 A11 A14

Current Objective Value: 1.00000000000030087

b0 := 0.0  
 b1 := 0.0  
 b2 := 0.0  
 x3 := 1.0  
 x4 := 2.1  
 x5 := 3.7  
 x6 := 4.2  
 x7 := 4.3  
 x8 := 4.4  
 x9 := 4.3  
 x10 := 4.2  
 x11 := 3.6  
 x12 := 2.7  
 S1 := 0.0  
 S2 := 2.0  
 S3 := 0.0  
 S4 := 4.2  
 S5 := 0.0  
 S6 := 7.4  
 S7 := 0.0  
 S8 := 8.4  
 S9 := 0.0  
 S10 := 8.6  
 S11 := 0.0  
 S12 := 8.8  
 S13 := 0.0  
 S14 := 8.6  
 S15 := 0.0  
 S16 := 8.4  
 S17 := 0.0  
 S18 := 7.2  
 S19 := 0.0  
 S20 := 5.4  
 S21 := 0.0  
 S22 := 0.0  
 S23 := 0.0  
 S24 := 1.0  
 S25 := 0.0  
 A1 := 0.0  
 A2 := 0.0  
 A3 := 0.0  
 A4 := 0.0

```

A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

```

Current Basic Variables:  x5 x10 x11 x3 S4 S6 x6 x7 x8 x9 S8 S18 x12
S2 x4 S12 S16 S10 S14 A13 A12 S20 S24 b2 A14

```

```

Current Objective Value:  1.0000000000020086

```

```

b0 := 0.0
b1 := 0.0
b2 := 1e-12
x3 := 0.9999999999962
x4 := 2.0999999999956
x5 := 3.6999999999943003
x6 := 4.1999999999948
x7 := 4.2999999999923
x8 := 4.399999999994001
x9 := 4.2999999999946
x10 := 4.1999999999943
x11 := 3.5999999999945
x12 := 2.6999999999975004
S1 := 0.0
S2 := 1.9999999999924
S3 := 0.0
S4 := 4.1999999999912
S5 := 0.0
S6 := 7.399999999988601
S7 := 0.0
S8 := 8.3999999999896
S9 := 0.0
S10 := 8.5999999999846
S11 := 0.0
S12 := 8.799999999988001
S13 := 0.0
S14 := 8.5999999999892
S15 := 0.0
S16 := 8.3999999999886
S17 := 0.0
S18 := 7.199999999989
S19 := 0.0
S20 := 5.399999999995001
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 0.9999999999999
S25 := 0.0
A1 := 0.0
A2 := 0.0

```

```

A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 2e-12
A13 := 1e-12
A14 := 0.999999999999

```

---

```

Current Basic Variables:  x5 x10 x11 x3 S4 S6 x6 x7 x8 x9 S8 S18 x12
S2 x4 S12 S16 S10 S14 A13 b1 S20 S24 b2 A14
Current Objective Value: 1.00000000000000087

```

```

b0 := 0.0
b1 := 2e-12
b2 := 1e-12
x3 := 0.9999999999874001
x4 := 2.0999999999842
x5 := 3.6999999999839
x6 := 4.1999999999794
x7 := 4.2999999999803
x8 := 4.3999999999832005
x9 := 4.2999999999832
x10 := 4.1999999999833
x11 := 3.5999999999895
x12 := 2.6999999999959003
S1 := 0.0
S2 := 1.9999999999748002
S3 := 0.0
S4 := 4.1999999999684
S5 := 0.0
S6 := 7.3999999999678
S7 := 0.0
S8 := 8.3999999999588
S9 := 0.0
S10 := 8.5999999999606
S11 := 0.0
S12 := 8.799999999966401
S13 := 0.0
S14 := 8.5999999999664
S15 := 0.0
S16 := 8.3999999999666
S17 := 0.0
S18 := 7.199999999979
S19 := 0.0
S20 := 5.399999999991801
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 0.9999999999970001
S25 := 0.0

```

```

A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 3e-12
A14 := 0.9999999999970001

```

```

-----
Current Basic Variables:  x5 x10 x11 x3 S4 S6 x6 x7 x8 x9 S8 S18 x12
S21 x4 S12 S16 S10 S14 A13 b1 S20 S24 b2 A14
Current Objective Value:  0.8780487804893501

```

```

b0 := 0.0
b1 := 0.12195121951265855
b2 := 0.12195121951165856
x3 := 0.0
x4 := 0.8682926829265483
x5 := 2.370731707317722
x6 := 2.626829268291904
x7 := 2.629268292684278
x8 := 3.009756097561693
x9 := 2.94634146341489
x10 := 2.8341463414639243
x11 := 2.6243902439042315
x12 := 2.297560975610727
S1 := 0.0
S2 := 0.0
S3 := 0.0
S4 := 1.7365853658530965
S5 := 0.0
S6 := 4.741463414635444
S7 := 0.0
S8 := 5.253658536583808
S9 := 0.0
S10 := 5.258536585368556
S11 := 0.0
S12 := 6.019512195123386
S13 := 0.0
S14 := 5.89268292682978
S15 := 0.0
S16 := 5.668292682927849
S17 := 0.0
S18 := 5.248780487808463
S19 := 0.0
S20 := 4.595121951221454
S21 := 0.12195121951065856
S22 := 0.0
S23 := 0.0

```

```

S24 := 0.7560975609756829
S25 := 0.0
A1  := 0.0
A2  := 0.0
A3  := 0.0
A4  := 0.0
A5  := 0.0
A6  := 0.0
A7  := 0.0
A8  := 0.0
A9  := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.12195121951365856
A14 := 0.7560975609756829

```

---

Current Basic Variables: x5 x10 x11 x3 S4 S6 x6 x7 x8 x9 S8 S18 x12

S21 S1 S12 S16 S10 S14 A13 b1 S20 S24 b2 A14

Current Objective Value: 0.7920792079223651

```

b0 := 0.0
b1 := 0.20792079207964353
b2 := 0.20792079207864353
x3 := 0.7049504950492766
x4 := 0.0
x5 := 1.4336633663375857
x6 := 1.517821782177798
x7 := 1.4514851485165838
x8 := 2.0297029702980645
x9 := 1.9920792079213565
x10 := 1.8712871287136927
x11 := 1.9366336633683519
x12 := 2.0138613861396766
S1  := 1.4099009900985533
S2  := 0.0
S3  := 0.0
S4  := 0.0
S5  := 0.0
S6  := 2.8673267326751715
S7  := 0.0
S8  := 3.035643564355596
S9  := 0.0
S10 := 2.9029702970331677
S11 := 0.0
S12 := 4.059405940596129
S13 := 0.0
S14 := 3.984158415842713
S15 := 0.0
S16 := 3.7425742574273855
S17 := 0.0
S18 := 3.8732673267367037
S19 := 0.0
S20 := 4.027722772279353
S21 := 0.20792079207764352

```

```

S22 := 0.0
S23 := 0.0
S24 := 0.584158415841713
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.2079207920806435
A14 := 0.584158415841713

```

---

```

Current Basic Variables:  x5 x10 x11 x3 S3 S6 x6 x7 x8 x9 S8 S18 x12
S21 S1 S12 S16 S10 S14 A13 b1 S20 S24 b2 A14
Current Objective Value: 0.7920792079223651

```

```

b0 := 0.0
b1 := 0.20792079207964353
b2 := 0.20792079207864353
x3 := 0.7049504950492766
x4 := 0.0
x5 := 1.4336633663375857
x6 := 1.517821782177798
x7 := 1.4514851485165838
x8 := 2.0297029702980645
x9 := 1.9920792079213565
x10 := 1.8712871287136927
x11 := 1.9366336633683519
x12 := 2.0138613861396766
S1 := 1.4099009900985533
S2 := 0.0
S3 := 0.0
S4 := 0.0
S5 := 0.0
S6 := 2.8673267326751715
S7 := 0.0
S8 := 3.035643564355596
S9 := 0.0
S10 := 2.9029702970331677
S11 := 0.0
S12 := 4.059405940596129
S13 := 0.0
S14 := 3.984158415842713
S15 := 0.0
S16 := 3.7425742574273855
S17 := 0.0
S18 := 3.8732673267367037
S19 := 0.0

```

```

S20 := 4.027722772279353
S21 := 0.20792079207764352
S22 := 0.0
S23 := 0.0
S24 := 0.584158415841713
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.2079207920806435
A14 := 0.584158415841713

```

---

```

Current Basic Variables: x5 x10 x11 x3 S3 S6 x6 x7 x8 x9 S8 S18 x12
S21 S1 S12 S16 x4 S14 A13 b1 S20 S24 b2 A14
Current Objective Value: 0.6861313868627604

```

```

b0 := 0.0
b1 := 0.3138686131392482
b2 := 0.3138686131382482
x3 := 1.5737226277380347
x4 := 1.0700729927020072
x5 := 0.2788321167878949
x6 := 0.15109489050889757
x7 := 0.0
x8 := 0.8218978102185712
x9 := 0.8160583941597446
x10 := 0.6846715328461206
x11 := 1.0890510948915146
x12 := 1.6642335766429812
S1 := 3.1474452554760695
S2 := 0.0
S3 := 2.1401459854040144
S4 := 0.0
S5 := 0.0
S6 := 0.5576642335757898
S7 := 0.0
S8 := 0.30218978101779514
S9 := 0.0
S10 := 0.0
S11 := 0.0
S12 := 1.6437956204371424
S13 := 0.0
S14 := 1.6321167883194891
S15 := 0.0
S16 := 1.3693430656922412
S17 := 0.0

```

```

S18 := 2.1781021897830293
S19 := 0.0
S20 := 3.3284671532859624
S21 := 0.3138686131372482
S22 := 0.0
S23 := 0.0
S24 := 0.3722627737225037
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.31386861314024816
A14 := 0.3722627737225037

```

---

```

Current Basic Variables: x5 x10 x11 x3 S3 S6 x6 x7 x8 x9 S9 S18 x12
S21 S1 S12 S16 x4 S14 A13 b1 S20 S24 b2 A14

```

```

Current Objective Value: 0.6744186046527684

```

```

b0 := 0.0
b1 := 0.32558139534924024
b2 := 0.32558139534824027
x3 := 1.6697674418599695
x4 := 1.188372093022927
x5 := 0.15116279069898145
x6 := 0.0
x7 := 0.1604651162768912
x8 := 0.6883720930246617
x9 := 0.6860465116288327
x10 := 0.5534883720942095
x11 := 0.9953488372115782
x12 := 1.6255813953500073
S1 := 3.339534883719939
S2 := 0.0
S3 := 2.376744186045854
S4 := 0.0
S5 := 0.0
S6 := 0.3023255813979629
S7 := 0.0
S8 := 0.0
S9 := 0.3209302325537824
S10 := 0.0
S11 := 0.0
S12 := 1.3767441860493235
S13 := 0.0
S14 := 1.3720930232576654
S15 := 0.0

```



```

S16 := 1.106976744188419
S17 := 0.0
S18 := 1.9906976744231564
S19 := 0.0
S20 := 3.2511627907000147
S21 := 0.32558139534724023
S22 := 0.0
S23 := 0.0
S24 := 0.3488372093025196
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.3255813953502402
A14 := 0.3488372093025196

```

---

```

Current Basic Variables:  x5 x10 x11 x3 S3 S7 x6 x7 x8 x9 S9 S18 x12
S21 S1 S12 S16 x4 S14 A13 b1 S20 S24 b2 A14

```

```

Current Objective Value: 0.660550458717082

```

```

b0 := 0.0
b1 := 0.3394495412849266
b2 := 0.3394495412839266
x3 := 1.7834862385325978
x4 := 1.3284403669733593
x5 := 0.0
x6 := 0.1788990825703542
x7 := 0.35045871559579445
x8 := 0.5302752293578371
x9 := 0.532110091742714
x10 := 0.3981651376145222
x11 := 0.8844036697260872
x12 := 1.5798165137622424
S1 := 3.5669724770651956
S2 := 0.0
S3 := 2.6568807339467186
S4 := 0.0
S5 := 0.0
S6 := 0.0
S7 := 0.3577981651407084
S8 := 0.0
S9 := 0.7009174311915889
S10 := 0.0
S11 := 0.0
S12 := 1.0605504587156742
S13 := 0.0

```

```

S14 := 1.064220183485428
S15 := 0.0
S16 := 0.7963302752290444
S17 := 0.0
S18 := 1.7688073394521744
S19 := 0.0
S20 := 3.159633027524485
S21 := 0.3394495412829266
S22 := 0.0
S23 := 0.0
S24 := 0.3211009174311469
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.3394495412859266
A14 := 0.3211009174311469

```

---

```

Current Basic Variables:  x5 x10 x11 x3 S3 S7 x6 x7 x8 x9 S9 S18 x12
S21 S1 S12 S5 x4 S14 A13 b1 S20 S24 b2 A14
Current Objective Value: 0.6250000000014996

```

```

b0 := 0.0
b1 := 0.3750000000005089
b2 := 0.37499999999950895
x3 := 2.075000000000373
x4 := 1.6875000000007412
x5 := 0.3874999999998476
x6 := 0.6375000000013664
x7 := 0.8374999999992725
x8 := 0.1250000000001984
x9 := 0.13749999999974988
x10 := 0.0
x11 := 0.6000000000014284
x12 := 1.4625000000008206
S1 := 4.150000000000746
S2 := 0.0
S3 := 3.3750000000014824
S4 := 0.0
S5 := 0.7749999999996952
S6 := 0.0
S7 := 1.2750000000027328
S8 := 0.0
S9 := 1.6749999999998545
S10 := 0.0
S11 := 0.0

```

```

S12 := 0.2500000000003968
S13 := 0.0
S14 := 0.27499999999949976
S15 := 0.0
S16 := 0.0
S17 := 0.0
S18 := 1.2000000000028568
S19 := 0.0
S20 := 2.925000000001641
S21 := 0.37499999999850897
S22 := 0.0
S23 := 0.0
S24 := 0.2499999999998218
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.3750000000015089
A14 := 0.2499999999998218

```

---

```

Current Basic Variables:  x5 x10 x11 x3 S3 S7 x6 x7 x8 x9 S9 S18 x12
S21 S1 S15 S5 x4 S14 A13 b1 S20 S24 b2 A14

```

```

Current Objective Value: 0.6140350877207804

```

```

b0 := 0.0
b1 := 0.3859649122812281
b2 := 0.3859649122802281
x3 := 2.1649122807022705
x4 := 1.7982456140360048
x5 := 0.5070175438596864
x6 := 0.7789473684226436
x7 := 0.9877192982451249
x8 := 0.0
x9 := 0.015789473683767208
x10 := 0.12280701754405454
x11 := 0.5122807017556751
x12 := 1.4263157894744474
S1 := 4.329824561404541
S2 := 0.0
S3 := 3.5964912280720096
S4 := 0.0
S5 := 1.014035087719373
S6 := 0.0
S7 := 1.5578947368452871
S8 := 0.0
S9 := 1.9754385964902499

```

```

S10 := 0.0
S11 := 0.0
S12 := 0.0
S13 := 0.0
S14 := 0.031578947367534416
S15 := 0.24561403508810908
S16 := 0.0
S17 := 0.0
S18 := 1.0245614035113502
S19 := 0.0
S20 := 2.8526315789488947
S21 := 0.38596491227922813
S22 := 0.0
S23 := 0.0
S24 := 0.22807017543854385
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.38596491228222807
A14 := 0.22807017543854385

```

---

```

Current Basic Variables:  x5 x10 x11 x3 S3 S7 x6 x7 x8 x9 S9 S18 x12
S21 S1 S15 S5 x4 S11 A13 b1 S20 S24 b2 A14

```

```

Current Objective Value:  0.6126126126141347

```

```

b0 := 0.0
b1 := 0.38738738738787376
b2 := 0.3873873873868738
x3 := 2.1765765765767653
x4 := 1.8126126126131263
x5 := 0.5225225225221245
x6 := 0.7972972972983731
x7 := 1.0072072072061709
x8 := 0.016216216215760915
x9 := 0.0
x10 := 0.1387387387384863
x11 := 0.5009009009025095
x12 := 1.4216216216225166
S1 := 4.353153153153531
S2 := 0.0
S3 := 3.6252252252262527
S4 := 0.0
S5 := 1.045045045044249
S6 := 0.0
S7 := 1.5945945945967461

```

```

S8 := 0.0
S9 := 2.0144144144123417
S10 := 0.0
S11 := 0.03243243243152183
S12 := 0.0
S13 := 0.0
S14 := 0.0
S15 := 0.2774774774769726
S16 := 0.0
S17 := 0.0
S18 := 1.001801801805019
S19 := 0.0
S20 := 2.843243243245033
S21 := 0.3873873873858738
S22 := 0.0
S23 := 0.0
S24 := 0.22522522522525246
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.38738738738887374
A14 := 0.22522522522525246

```

```

-----
Current Basic Variables:  x5 x10 x11 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12
S21 S1 S15 S5 x4 S11 A13 b1 S20 S24 b2 A14
Current Objective Value:  0.550000000001321

```

```

b0 := 0.0
b1 := 0.45000000000068746
b2 := 0.4499999999996875
x3 := 2.690000000001837
x4 := 2.4450000000025445
x5 := 1.2050000000017937
x6 := 1.6050000000036695
x7 := 1.8650000000017182
x8 := 0.7300000000018367
x9 := 0.6950000000022318
x10 := 0.8400000000019993
x11 := 0.0
x12 := 1.215000000002315
S1 := 5.380000000003674
S2 := 0.0
S3 := 4.890000000005089
S4 := 0.0
S5 := 2.4100000000035875

```

```

S6 := 0.0
S7 := 3.210000000007339
S8 := 0.0
S9 := 3.7300000000034363
S10 := 0.0
S11 := 1.4600000000036735
S12 := 0.0
S13 := 1.3900000000044637
S14 := 0.0
S15 := 1.6800000000039985
S16 := 0.0
S17 := 0.0
S18 := 0.0
S19 := 0.0
S20 := 2.43000000000463
S21 := 0.4499999999986875
S22 := 0.0
S23 := 0.0
S24 := 0.09999999999962508
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.45000000000168744
A14 := 0.09999999999962508

```

```

-----
Current Basic Variables:  x5 x10 x11 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12
S21 S1 S15 S5 x4 S11 A13 b1 S20 S24 b2 S17

```

```

Current Objective Value:  0.5000000000015085

```

```

b0 := 0.0
b1 := 0.50000000000005
b2 := 0.49999999999995
x3 := 3.10000000000003
x4 := 2.9500000000000651
x5 := 1.7499999999997504
x6 := 2.25000000000012514
x7 := 2.549999999999915
x8 := 1.2999999999996996
x9 := 1.2500000000000151
x10 := 1.3999999999998995
x11 := 0.39999999999850033
x12 := 1.050000000000085
S1 := 6.20000000000006
S2 := 0.0
S3 := 5.9000000000001302

```

```

S4 := 0.0
S5 := 3.499999999999501
S6 := 0.0
S7 := 4.5000000000002503
S8 := 0.0
S9 := 5.09999999999983
S10 := 0.0
S11 := 2.5999999999993992
S12 := 0.0
S13 := 2.500000000000302
S14 := 0.0
S15 := 2.799999999999799
S16 := 0.0
S17 := 0.799999999970007
S18 := 0.0
S19 := 0.0
S20 := 2.10000000000017
S21 := 0.49999999999850003
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.50000000000015
A14 := 0.0

```

---

```

Current Basic Variables:  x5 x10 b0 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12
S21 S1 S15 S5 x4 S11 A13 b1 S20 S24 b2 S17

```

```

Current Objective Value: 0.3125000000022113

```

```

b0 := 0.12499999999953132
b1 := 0.4375000000007344
b2 := 0.4374999999997343
x3 := 3.29999999999955
x4 := 2.968750000000581
x5 := 2.0312499999986957
x6 := 2.193750000001462
x7 := 2.3687499999998294
x8 := 1.2999999999996996
x9 := 1.2437500000001742
x10 := 1.0125000000013524
x11 := 0.0
x12 := 1.2062500000002643
S1 := 6.5999999999991

```

```

S2 := 0.0
S3 := 5.937500000001162
S4 := 0.0
S5 := 4.062499999997391
S6 := 0.0
S7 := 4.387500000002924
S8 := 0.0
S9 := 4.737499999999659
S10 := 0.0
S11 := 2.5999999999993992
S12 := 0.0
S13 := 2.4875000000003484
S14 := 0.0
S15 := 2.025000000002705
S16 := 0.0
S17 := 1.1102230246251565e-16
S18 := 0.0
S19 := 0.0
S20 := 2.4125000000005286
S21 := 0.43749999999873435
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.312500000002203
A14 := 0.0

```

---

Current Basic Variables: x5 x10 b0 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12

S21 S1 S15 S5 x4 S11 A12 b1 S20 S24 b2 S17

Current Objective Value: 0.2597402597420992

```

b0 := 0.24675324675363636
b1 := 0.24675324675263646
b2 := 0.5064935064937273
x3 := 3.4168831168834903
x4 := 2.8181818181813374
x5 := 2.3701298701309543
x6 := 1.8142857142845008
x7 := 2.4129870129871542
x8 := 1.3779220779223267
x9 := 1.1987012987011554
x10 := 0.6610389610378358
x11 := 0.0

```



```

x12 := 1.1376623376621184
S1 := 6.833766233766981
S2 := 0.0
S3 := 5.636363636362675
S4 := 0.0
S5 := 4.740259740261909
S6 := 0.0
S7 := 3.6285714285690016
S8 := 0.0
S9 := 4.8259740259743085
S10 := 0.0
S11 := 2.7558441558446534
S12 := 0.0
S13 := 2.3974025974023108
S14 := 0.0
S15 := 1.3220779220756715
S16 := 0.0
S17 := 3.4171799589274597e-16
S18 := 0.0
S19 := 0.0
S20 := 2.275324675324237
S21 := 0.5064935064927273
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.25974025974209086
A13 := 0.0
A14 := 0.0

```

```

-----
Current Basic Variables:  x5 x10 b0 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12
S21 S1 S15 S5 x4 S11 A12 b1 S20 S25 b2 S17

```

```

Current Objective Value:  0.2597402597420992

```

```

b0 := 0.24675324675363636
b1 := 0.24675324675263646
b2 := 0.5064935064937273
x3 := 3.4168831168834903
x4 := 2.8181818181813374
x5 := 2.3701298701309543
x6 := 1.8142857142845008
x7 := 2.4129870129871542
x8 := 1.3779220779223267
x9 := 1.1987012987011554

```

```

x10 := 0.6610389610378358
x11 := 0.0
x12 := 1.1376623376621184
S1 := 6.833766233766981
S2 := 0.0
S3 := 5.636363636362675
S4 := 0.0
S5 := 4.740259740261909
S6 := 0.0
S7 := 3.6285714285690016
S8 := 0.0
S9 := 4.8259740259743085
S10 := 0.0
S11 := 2.7558441558446534
S12 := 0.0
S13 := 2.3974025974023108
S14 := 0.0
S15 := 1.3220779220756715
S16 := 0.0
S17 := 3.4171799589274597e-16
S18 := 0.0
S19 := 0.0
S20 := 2.275324675324237
S21 := 0.5064935064927273
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.25974025974209086
A13 := 0.0
A14 := 0.0

```

```

-----
Current Basic Variables:  x5 x10 b0 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12
S21 S1 S15 S5 x4 S11 A12 b1 S20 S25 b2 S18

```

```

Current Objective Value: 0.2597402597420991

```

```

b0 := 0.2467532467536364
b1 := 0.24675324675263652
b2 := 0.5064935064937272
x3 := 3.4168831168834903
x4 := 2.8181818181813374
x5 := 2.3701298701309543
x6 := 1.814285714284501
x7 := 2.4129870129871542

```

```

x8 := 1.3779220779223267
x9 := 1.1987012987011554
x10 := 0.6610389610378357
x11 := 0.0
x12 := 1.1376623376621187
S1 := 6.833766233766981
S2 := 0.0
S3 := 5.636363636362675
S4 := 0.0
S5 := 4.740259740261909
S6 := 0.0
S7 := 3.628571428569002
S8 := 0.0
S9 := 4.8259740259743085
S10 := 0.0
S11 := 2.7558441558446534
S12 := 0.0
S13 := 2.3974025974023108
S14 := 0.0
S15 := 1.3220779220756713
S16 := 0.0
S17 := 0.0
S18 := 3.4171799589274587e-16
S19 := 0.0
S20 := 2.2753246753242373
S21 := 0.5064935064927272
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.25974025974209075
A13 := 0.0
A14 := 0.0

```

```

-----
Current Basic Variables:  x5 x10 b0 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12
S21 S1 S15 S5 x4 S11 x11 b1 S20 S25 b2 S18
Current Objective Value:  7.93809462606987e-15
b0 := 0.33333333333343335
b1 := 0.3333333333333335
b2 := 0.33333333333323333
x3 := 3.633333333335233
x4 := 3.0000000000008007
x5 := 2.5000000000019997

```

```

x6 := 2.1000000000000801
x7 := 2.0666666666664367
x8 := 1.2999999999996996
x9 := 1.233333333333434
x10 := 0.36666666666634637
x11 := 0.66666666666713668
x12 := 1.4666666666668767
S1 := 7.2666666666670466
S2 := 0.0
S3 := 6.0000000000001601
S4 := 0.0
S5 := 5.0000000000003995
S6 := 0.0
S7 := 4.2000000000001602
S8 := 0.0
S9 := 4.1333333333328734
S10 := 0.0
S11 := 2.5999999999993992
S12 := 0.0
S13 := 2.466666666666868
S14 := 0.0
S15 := 0.73333333333269327
S16 := 0.0
S17 := 0.0
S18 := 1.33333333333427337
S19 := 0.0
S20 := 2.9333333333337534
S21 := 0.33333333333313333
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.0
A14 := 0.0

```

- Terminate Procedure: Optimal Value = 7.93809462606987e-15

```

-----
Current Basic Variables:  x5 x10 b0 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12
S21 S1 S15 S5 x4 S11 x11 b1 S20 S25 b2 S18
Current Objective Value: 7.93809462606987e-15
b0 := 0.33333333333343335
b1 := 0.3333333333333335
b2 := 0.33333333333323333

```

```

x3 := 3.6333333333335233
x4 := 3.0000000000008007
x5 := 2.5000000000019997
x6 := 2.100000000000801
x7 := 2.0666666666664367
x8 := 1.2999999999996996
x9 := 1.233333333333434
x10 := 0.366666666666346637
x11 := 0.66666666666713668
x12 := 1.466666666668767
S1 := 7.266666666670466
S2 := 0.0
S3 := 6.000000000001601
S4 := 0.0
S5 := 5.0000000000039995
S6 := 0.0
S7 := 4.200000000001602
S8 := 0.0
S9 := 4.1333333333328734
S10 := 0.0
S11 := 2.5999999999993992
S12 := 0.0
S13 := 2.466666666666868
S14 := 0.0
S15 := 0.73333333333269327
S16 := 0.0
S17 := 0.0
S18 := 1.33333333333427337
S19 := 0.0
S20 := 2.933333333337534
S21 := 0.3333333333313333
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.0
A14 := 0.0

```

Run the Vanilla Simplex Method or the 2st step of Two Step Method  
Initialize the zero-th row:

```

-----
Current Basic Variables:  x5 x10 b0 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12
S21 S1 S15 S5 x4 S11 x11 b1 S20 S25 b2 S18

```

Current Objective Value: 18.333333333339937

b0 := 0.33333333333433335  
b1 := 0.33333333333333335  
b2 := 0.3333333333323333  
x3 := 3.633333333335233  
x4 := 3.0000000000008007  
x5 := 2.5000000000019997  
x6 := 2.100000000000801  
x7 := 2.066666666664367  
x8 := 1.2999999999996996  
x9 := 1.233333333333434  
x10 := 0.36666666666346637  
x11 := 0.6666666666713668  
x12 := 1.466666666668767  
S1 := 7.266666666670466  
S2 := 0.0  
S3 := 6.000000000001601  
S4 := 0.0  
S5 := 5.0000000000039995  
S6 := 0.0  
S7 := 4.200000000001602  
S8 := 0.0  
S9 := 4.133333333328734  
S10 := 0.0  
S11 := 2.5999999999993992  
S12 := 0.0  
S13 := 2.466666666666868  
S14 := 0.0  
S15 := 0.7333333333269327  
S16 := 0.0  
S17 := 0.0  
S18 := 1.3333333333427337  
S19 := 0.0  
S20 := 2.933333333337534  
S21 := 0.3333333333313333  
S22 := 0.0  
S23 := 0.0  
S24 := 0.0  
S25 := 0.0

-----  
Current Basic Variables: x5 x10 b0 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12  
S21 S1 S15 S5 x4 S11 x11 b1 S20 S24 b2 S18

Current Objective Value: 18.333333333339937

b0 := 0.33333333333433335  
b1 := 0.33333333333333335  
b2 := 0.3333333333323333  
x3 := 3.633333333335233  
x4 := 3.0000000000008007  
x5 := 2.5000000000019997  
x6 := 2.100000000000801  
x7 := 2.066666666664367  
x8 := 1.2999999999996996  
x9 := 1.233333333333434  
x10 := 0.36666666666346637

```

x11 := 0.6666666666713668
x12 := 1.466666666668767
S1 := 7.266666666670466
S2 := 0.0
S3 := 6.000000000001601
S4 := 0.0
S5 := 5.0000000000039995
S6 := 0.0
S7 := 4.200000000001602
S8 := 0.0
S9 := 4.133333333328734
S10 := 0.0
S11 := 2.599999999993992
S12 := 0.0
S13 := 2.46666666666868
S14 := 0.0
S15 := 0.7333333333269327
S16 := 0.0
S17 := 0.0
S18 := 1.3333333333427337
S19 := 0.0
S20 := 2.93333333337534
S21 := 0.333333333313333
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0

```

– Terminate Procedure: Optimal Value = 18.33333333339937

---

Current Basic Variables: x5 x10 b0 x3 S3 S7 x6 x7 x8 x9 S9 S13 x12  
S21 S1 S15 S5 x4 S11 x11 b1 S20 S24 b2 S18

Current Objective Value: 18.33333333339937

```

b0 := 0.3333333333343335
b1 := 0.3333333333333335
b2 := 0.3333333333323333
x3 := 3.633333333335233
x4 := 3.000000000008007
x5 := 2.5000000000019997
x6 := 2.10000000000801
x7 := 2.066666666664367
x8 := 1.299999999996996
x9 := 1.233333333333434
x10 := 0.36666666666346637
x11 := 0.6666666666713668
x12 := 1.466666666668767
S1 := 7.266666666670466
S2 := 0.0
S3 := 6.000000000001601
S4 := 0.0
S5 := 5.0000000000039995
S6 := 0.0
S7 := 4.200000000001602
S8 := 0.0
S9 := 4.133333333328734

```

```

S10 := 0.0
S11 := 2.59999999999993992
S12 := 0.0
S13 := 2.4666666666666868
S14 := 0.0
S15 := 0.7333333333269327
S16 := 0.0
S17 := 0.0
S18 := 1.3333333333427337
S19 := 0.0
S20 := 2.933333333337534
S21 := 0.333333333313333
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0

```

Geonsikui-MacBook-Pro-2:IE535\_Simplex geonsik\$ python

model27\_mySimplex\_Q2.py

Initialize the given LP problem:

Initialize the zero-th row:

---

Current Basic Variables: A3 A8 A9 S10 A1 S2 A2 S4 A6 S6 A4 S8 A5

S16 S12 A7 S14 A13 S18 A12 A10 S20 S24 A11 A14

Current Objective Value: 35.50000000000301

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 0.0
S1 := 0.0
S2 := 1.0
S3 := 0.0
S4 := 2.1
S5 := 0.0
S6 := 3.7
S7 := 0.0
S8 := 4.2
S9 := 0.0
S10 := 4.3
S11 := 0.0
S12 := 4.4
S13 := 0.0
S14 := 4.3
S15 := 0.0
S16 := 4.2
S17 := 0.0
S18 := 3.6
S19 := 0.0
S20 := 2.7
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0

```



```

S25 := 0.0
A1  := 1.0
A2  := 2.1
A3  := 3.7
A4  := 4.2
A5  := 4.3
A6  := 4.4
A7  := 4.3
A8  := 4.2
A9  := 3.6
A10 := 2.7
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

TWO STEP METHOD CALLED:

---

Current Basic Variables: A3 A8 A9 S10 A1 S2 A2 S4 A6 S6 A4 S8 A5  
S16 S12 A7 S14 A13 S18 A12 A10 S20 S24 A11 A14

Current Objective Value: 35.500000000000301

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 0.0
S1  := 0.0
S2  := 1.0
S3  := 0.0
S4  := 2.1
S5  := 0.0
S6  := 3.7
S7  := 0.0
S8  := 4.2
S9  := 0.0
S10 := 4.3
S11 := 0.0
S12 := 4.4
S13 := 0.0
S14 := 4.3
S15 := 0.0
S16 := 4.2
S17 := 0.0
S18 := 3.6
S19 := 0.0
S20 := 2.7
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1  := 1.0
A2  := 2.1
A3  := 3.7
A4  := 4.2
A5  := 4.3

```

```

A6 := 4.4
A7 := 4.3
A8 := 4.2
A9 := 3.6
A10 := 2.7
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0
Run the 1st step of Two Step Method

```

---

```

Current Basic Variables:  A3 A8 A9 S10 x3 S2 A2 S4 A6 S6 A4 S8 A5
S16 S12 A7 S14 A13 S18 A12 A10 S20 S24 A11 A14

```

```

Current Objective Value:  25.5000000000003013

```

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 1.0
S1 := 0.0
S2 := 2.0
S3 := 0.0
S4 := 3.1
S5 := 0.0
S6 := 4.7
S7 := 0.0
S8 := 5.2
S9 := 0.0
S10 := 5.3
S11 := 0.0
S12 := 5.4
S13 := 0.0
S14 := 5.3
S15 := 0.0
S16 := 5.2
S17 := 0.0
S18 := 4.6
S19 := 0.0
S20 := 3.7
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 0.0
A2 := 1.1
A3 := 2.7
A4 := 3.2
A5 := 3.3
A6 := 3.4000000000000004
A7 := 3.3
A8 := 3.2
A9 := 2.6
A10 := 1.7000000000000002
A11 := 1e-12

```

A12 := 1e-12  
A13 := 1e-12  
A14 := 1.0

---

Current Basic Variables: A3 A8 A9 S10 x3 S2 S1 S4 A6 S6 A4 S8 A5  
S16 S12 A7 S14 A13 S18 A12 A10 S20 S24 A11 A14

Current Objective Value: 15.6000000000003012

b0 := 0.0  
b1 := 0.0  
b2 := 0.0  
x3 := 2.1  
S1 := 1.1  
S2 := 3.1  
S3 := 0.0  
S4 := 4.2  
S5 := 0.0  
S6 := 5.8000000000000001  
S7 := 0.0  
S8 := 6.3000000000000001  
S9 := 0.0  
S10 := 6.4  
S11 := 0.0  
S12 := 6.5  
S13 := 0.0  
S14 := 6.4  
S15 := 0.0  
S16 := 6.3000000000000001  
S17 := 0.0  
S18 := 5.699999999999999  
S19 := 0.0  
S20 := 4.8000000000000001  
S21 := 0.0  
S22 := 0.0  
S23 := 0.0  
S24 := 1.0  
S25 := 0.0  
A1 := 0.0  
A2 := 0.0  
A3 := 1.6  
A4 := 2.1  
A5 := 2.1999999999999997  
A6 := 2.3000000000000003  
A7 := 2.1999999999999997  
A8 := 2.1  
A9 := 1.5  
A10 := 0.6000000000000001  
A11 := 1e-12  
A12 := 1e-12  
A13 := 1e-12  
A14 := 1.0

---

Current Basic Variables: A3 A8 A9 S10 x3 S2 S1 S4 A6 S6 A4 S8 A5  
S16 S12 A7 S14 A13 S18 A12 S3 S20 S24 A11 A14

Current Objective Value: 10.8000000000003012

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 2.7
S1 := 1.7000000000000002
S2 := 3.7
S3 := 0.6000000000000001
S4 := 4.800000000000001
S5 := 0.0
S6 := 6.4
S7 := 0.0
S8 := 6.9
S9 := 0.0
S10 := 7.0
S11 := 0.0
S12 := 7.1
S13 := 0.0
S14 := 7.0
S15 := 0.0
S16 := 6.9
S17 := 0.0
S18 := 6.299999999999999
S19 := 0.0
S20 := 5.4
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 1.0
A4 := 1.5
A5 := 1.5999999999999996
A6 := 1.7000000000000002
A7 := 1.5999999999999996
A8 := 1.5
A9 := 0.8999999999999999
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

```

Current Basic Variables:  A3 A8 S19 S10 x3 S2 S1 S4 A6 S6 A4 S8 A5
S16 S12 A7 S14 A13 S18 A12 S3 S20 S24 A11 A14

```

```

Current Objective Value:  4.500000000003013

```

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 3.6
S1 := 2.6
S2 := 4.6
S3 := 1.5

```

```

S4 := 5.7000000000000001
S5 := 0.0
S6 := 7.3000000000000001
S7 := 0.0
S8 := 7.8000000000000001
S9 := 0.0
S10 := 7.9
S11 := 0.0
S12 := 8.0
S13 := 0.0
S14 := 7.9
S15 := 0.0
S16 := 7.8000000000000001
S17 := 0.0
S18 := 7.199999999999999
S19 := 0.8999999999999999
S20 := 6.3000000000000001
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.10000000000000009
A4 := 0.60000000000000001
A5 := 0.6999999999999997
A6 := 0.80000000000000003
A7 := 0.6999999999999997
A8 := 0.60000000000000001
A9 := 0.0
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

```

Current Basic Variables: S17 A8 S19 S10 x3 S2 S1 S4 A6 S6 A4 S8 A5
S16 S12 A7 S14 A13 S18 A12 S3 S20 S24 A11 A14

```

```

Current Objective Value: 3.9000000000003012

```

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 3.7
S1 := 2.7
S2 := 4.699999999999999
S3 := 1.6
S4 := 5.8000000000000001
S5 := 0.0
S6 := 7.4
S7 := 0.0
S8 := 7.9
S9 := 0.0
S10 := 8.0

```

```

S11 := 0.0
S12 := 8.1
S13 := 0.0
S14 := 8.0
S15 := 0.0
S16 := 7.9
S17 := 0.100000000000000009
S18 := 7.299999999999999
S19 := 1.0
S20 := 6.4
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.5
A5 := 0.5999999999999996
A6 := 0.70000000000000002
A7 := 0.5999999999999996
A8 := 0.5
A9 := 0.0
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

```

Current Basic Variables:  S17 A8 S19 S10 x3 S2 S1 S4 A6 S6 S5 S8 A5
S16 S12 A7 S14 A13 S18 A12 S3 S20 S24 A11 A14

```

```

Current Objective Value:  1.4000000000030122

```

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 4.2
S1 := 3.2
S2 := 5.199999999999999
S3 := 2.1
S4 := 6.3000000000000001
S5 := 0.5
S6 := 7.9
S7 := 0.0
S8 := 8.4
S9 := 0.0
S10 := 8.5
S11 := 0.0
S12 := 8.6
S13 := 0.0
S14 := 8.5
S15 := 0.0
S16 := 8.4
S17 := 0.60000000000000001

```

```

S18 := 7.799999999999999
S19 := 1.5
S20 := 6.9
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.09999999999999964
A6 := 0.20000000000000018
A7 := 0.09999999999999964
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

```

Current Basic Variables: S17 S7 S19 S10 x3 S2 S1 S4 A6 S6 S5 S8 A5
S16 S12 A7 S14 A13 S18 A12 S3 S20 S24 A11 A14

```

```

Current Objective Value: 1.4000000000030122

```

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 4.2
S1 := 3.2
S2 := 5.199999999999999
S3 := 2.1
S4 := 6.300000000000001
S5 := 0.5
S6 := 7.9
S7 := 0.0
S8 := 8.4
S9 := 0.0
S10 := 8.5
S11 := 0.0
S12 := 8.6
S13 := 0.0
S14 := 8.5
S15 := 0.0
S16 := 8.4
S17 := 0.6000000000000001
S18 := 7.799999999999999
S19 := 1.5
S20 := 6.9
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0

```

```

S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.099999999999999964
A6 := 0.200000000000000018
A7 := 0.099999999999999964
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 1e-12
A12 := 1e-12
A13 := 1e-12
A14 := 1.0

```

---

```

Current Basic Variables: S17 S7 S19 S10 x3 S2 S1 S4 A6 S6 S5 S8 A5
S16 S12 S15 S14 A13 S18 A12 S3 S20 S24 A11 A14

```

```

Current Objective Value: 1.1000000000030132

```

```

b0 := 0.0
b1 := 0.0
b2 := 0.0
x3 := 4.3
S1 := 3.3
S2 := 5.299999999999999
S3 := 2.1999999999999997
S4 := 6.4
S5 := 0.5999999999999996
S6 := 8.0
S7 := 0.099999999999999964
S8 := 8.5
S9 := 0.0
S10 := 8.6
S11 := 0.0
S12 := 8.7
S13 := 0.0
S14 := 8.6
S15 := 0.099999999999999964
S16 := 8.5
S17 := 0.6999999999999997
S18 := 7.899999999999999
S19 := 1.5999999999999996
S20 := 7.0
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 1.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.100000000000000053

```



A7 := 0.0  
A8 := 0.0  
A9 := 0.0  
A10 := 0.0  
A11 := 1e-12  
A12 := 1e-12  
A13 := 1e-12  
A14 := 1.0

-----  
Current Basic Variables: S17 S7 S19 S10 x3 S2 S1 S4 A6 S6 S5 S8 S13  
S16 S12 S15 S14 A13 S18 A12 S3 S20 S24 A11 A14

Current Objective Value: 1.10000000000030132

b0 := 0.0  
b1 := 0.0  
b2 := 0.0  
x3 := 4.3  
S1 := 3.3  
S2 := 5.299999999999999  
S3 := 2.1999999999999997  
S4 := 6.4  
S5 := 0.5999999999999996  
S6 := 8.0  
S7 := 0.09999999999999964  
S8 := 8.5  
S9 := 0.0  
S10 := 8.6  
S11 := 0.0  
S12 := 8.7  
S13 := 0.0  
S14 := 8.6  
S15 := 0.09999999999999964  
S16 := 8.5  
S17 := 0.6999999999999997  
S18 := 7.899999999999999  
S19 := 1.5999999999999996  
S20 := 7.0  
S21 := 0.0  
S22 := 0.0  
S23 := 0.0  
S24 := 1.0  
S25 := 0.0  
A1 := 0.0  
A2 := 0.0  
A3 := 0.0  
A4 := 0.0  
A5 := 0.0  
A6 := 0.100000000000000053  
A7 := 0.0  
A8 := 0.0  
A9 := 0.0  
A10 := 0.0  
A11 := 1e-12  
A12 := 1e-12  
A13 := 1e-12

A14 := 1.0

---

Current Basic Variables: S17 S7 S19 S10 x3 S2 S1 S4 S9 S6 S5 S8 S13  
S16 S12 S15 S14 A13 S18 A12 S3 S20 S24 A11 A14

Current Objective Value: 1.0000000000030127

b0 := 0.0  
b1 := 0.0  
b2 := 0.0  
x3 := 4.4  
S1 := 3.4000000000000004  
S2 := 5.3999999999999995  
S3 := 2.3000000000000003  
S4 := 6.500000000000001  
S5 := 0.7000000000000002  
S6 := 8.100000000000001  
S7 := 0.20000000000000018  
S8 := 8.600000000000001  
S9 := 0.10000000000000053  
S10 := 8.7  
S11 := 0.0  
S12 := 8.8  
S13 := 0.10000000000000053  
S14 := 8.7  
S15 := 0.20000000000000018  
S16 := 8.600000000000001  
S17 := 0.8000000000000003  
S18 := 7.999999999999999  
S19 := 1.7000000000000002  
S20 := 7.1000000000000005  
S21 := 0.0  
S22 := 0.0  
S23 := 0.0  
S24 := 1.0  
S25 := 0.0  
A1 := 0.0  
A2 := 0.0  
A3 := 0.0  
A4 := 0.0  
A5 := 0.0  
A6 := 0.0  
A7 := 0.0  
A8 := 0.0  
A9 := 0.0  
A10 := 0.0  
A11 := 1e-12  
A12 := 1e-12  
A13 := 1e-12  
A14 := 1.0

---

Current Basic Variables: S17 S7 S19 S10 x3 S2 S1 S4 S9 S6 S5 S8 S13  
S16 S12 S15 S14 A13 S18 A12 S3 S20 S24 b2 A14

Current Objective Value: 1.0000000000020126

b0 := 0.0  
b1 := 0.0

```

b2 := 1e-12
x3 := 4.399999999994001
S1 := 3.3999999999978003
S2 := 5.399999999990199
S3 := 2.2999999999984
S4 := 6.499999999989601
S5 := 0.699999999997002
S6 := 8.0999999999883
S7 := 0.1999999999920018
S8 := 8.599999999988801
S9 := 0.10000000000170053
S10 := 8.6999999999863
S11 := 0.0
S12 := 8.799999999988001
S13 := 0.09999999999940053
S14 := 8.699999999988599
S15 := 0.1999999999970017
S16 := 8.5999999999883
S17 := 0.799999999995002
S18 := 7.999999999988499
S19 := 1.6999999999965
S20 := 7.099999999991501
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 0.999999999999
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 2e-12
A13 := 1e-12
A14 := 0.999999999999

```

---

```

Current Basic Variables: S17 S7 S19 S10 x3 S2 S1 S4 S9 S6 S5 S8 S13
S16 S12 S15 S14 A13 S18 b1 S3 S20 S24 b2 A14

```

```

Current Objective Value: 1.00000000000000127

```

```

b0 := 0.0
b1 := 2e-12
b2 := 1e-12
x3 := 4.3999999999832005
S1 := 3.3999999999958
S2 := 5.399999999970599
S3 := 2.299999999999
S4 := 6.499999999967401
S5 := 0.6999999999993002

```

```

S6 := 8.0999999999671
S7 := 0.20000000000380017
S8 := 8.599999999962602
S9 := 0.10000000000290053
S10 := 8.6999999999635
S11 := 0.0
S12 := 8.799999999966401
S13 := 0.100000000000000053
S14 := 8.6999999999664
S15 := 0.1999999999990017
S16 := 8.599999999966501
S17 := 0.799999999937002
S18 := 7.99999999972699
S19 := 1.699999999873001
S20 := 7.099999999979101
S21 := 0.0
S22 := 0.0
S23 := 0.0
S24 := 0.999999999970001
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 3e-12
A14 := 0.999999999970001

```

---

```

Current Basic Variables: S17 S7 S21 S10 x3 S2 S1 S4 S9 S6 S5 S8 S13
S16 S12 S15 S14 A13 S18 b1 S3 S20 S24 b2 A14

```

```

Current Objective Value: 0.790123456791705

```

```

b0 := 0.0
b1 := 0.20987654321030863
b2 := 0.20987654320930862
x3 := 2.0074074074084822
S1 := 2.7283950617292128
S2 := 1.28641975308775
S3 := 2.027160493828199
S4 := 1.9876543209887645
S5 := 0.5950617283951458
S6 := 3.4197530864218164
S7 := 0.5148148148162631
S8 := 3.5000000000007017
S9 := 0.5827160493820103
S10 := 3.4320987654349535
S11 := 0.0
S12 := 4.014814814816964

```

```

S13 := 0.03703703703750798
S14 := 3.977777777779454
S15 := 0.1580246913582384
S16 := 3.856790123458726
S17 := 0.0864197530854508
S18 := 3.9283950617315107
S19 := 0.0
S20 := 4.0148148148169645
S21 := 0.20987654320830862
S22 := 0.0
S23 := 0.0
S24 := 0.5802469135803828
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.2098765432113086
A14 := 0.5802469135803828

```

---

```

Current Basic Variables: S17 S7 S21 S10 x3 S11 S1 S4 S9 S6 S5 S8
S13 S16 S12 S15 S14 A13 S18 b1 S3 S20 S24 b2 A14
Current Objective Value: 0.6782608695666839

```

```

b0 := 0.0
b1 := 0.32173913043533037
b2 := 0.32173913043433033
x3 := 1.6382608695659107
S1 := 3.2765217391318195
S2 := 0.0
S3 := 2.787826086958347
S4 := 0.48869565217347266
S5 := 1.4452173913053112
S6 := 1.8313043478265072
S7 := 1.588695652176472
S8 := 1.6878260869553492
S9 := 1.7460869565222366
S10 := 1.530434782609584
S11 := 0.9060869565226762
S12 := 2.3704347826091436
S13 := 0.9095652173926777
S14 := 2.36695652173914
S15 := 1.0417391304359103
S16 := 2.234782608695911
S17 := 0.6121739130430531
S18 := 2.6643478260887643
S19 := 0.0

```

```

S20 := 3.2765217391318213
S21 := 0.32173913043333036
S22 := 0.0
S23 := 0.0
S24 := 0.35652173913033935
S25 := 0.0
A1  := 0.0
A2  := 0.0
A3  := 0.0
A4  := 0.0
A5  := 0.0
A6  := 0.0
A7  := 0.0
A8  := 0.0
A9  := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.32173913043633035
A14 := 0.35652173913033935

```

---

```

Current Basic Variables:  S17 S7 S21 S10 x3 S11 S1 S4 S9 S6 S5 S8
S13 S16 S12 S15 S14 A13 S18 b1 S3 S20 S24 b2 S19

```

```

Current Objective Value: 0.500000000001515

```

```

b0 := 0.0
b1 := 0.500000000000005
b2 := 0.499999999999995
x3 := 3.1000000000000302
S1 := 6.2000000000000602
S2 := 0.0
S3 := 6.0500000000000953
S4 := 0.149999999999964958
S5 := 4.8500000000000053
S6 := 1.35000000000005483
S7 := 5.3500000000001552
S8 := 0.84999999999990512
S9 := 5.64999999999994515
S10 := 0.55000000000011512
S11 := 4.4000000000000001
S12 := 1.80000000000006005
S13 := 4.3500000000000452
S14 := 1.85000000000001473
S15 := 4.50000000000002025
S16 := 1.70000000000004025
S17 := 3.4999999999998014
S18 := 2.7000000000001797
S19 := 2.0499999999999451
S20 := 4.1500000000001153
S21 := 0.499999999999850003
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0
A1  := 0.0

```

```

A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0
A9 := 0.0
A10 := 0.0
A11 := 0.0
A12 := 0.0
A13 := 0.50000000000015
A14 := 0.0

```

```

-----
Current Basic Variables: S17 S7 S21 S10 x3 S11 S1 S4 S9 S6 S5 S8
S13 S16 S12 S15 S14 b0 S18 b1 S3 S20 S24 b2 S19
Current Objective Value: 1.63202784619898e-14

```

```

b0 := 0.33333333333343335
b1 := 0.33333333333333337
b2 := 0.33333333333323334
x3 := 3.6333333333335235
S1 := 7.2666666666670468
S2 := 0.0
S3 := 6.6333333333336036
S4 := 0.63333333333344339
S5 := 6.13333333333372355
S6 := 1.1333333333332318
S7 := 5.7333333333336034
S8 := 1.53333333333344346
S9 := 5.6999999999996005
S10 := 1.56666666666708675
S11 := 4.9333333333334934
S12 := 2.33333333333355344
S13 := 4.8666666666668667
S14 := 2.4000000000001798
S15 := 3.9999999999987015
S16 := 3.26666666666717687
S17 := 2.96666666666638672
S18 := 4.3000000000006597
S19 := 2.1666666666666467
S20 := 5.1000000000004002
S21 := 0.33333333333313336
S22 := 0.0
S23 := 0.0
S24 := 0.0
S25 := 0.0
A1 := 0.0
A2 := 0.0
A3 := 0.0
A4 := 0.0
A5 := 0.0
A6 := 0.0
A7 := 0.0
A8 := 0.0

```

A9 := 0.0  
A10 := 0.0  
A11 := 0.0  
A12 := 0.0  
A13 := 0.0  
A14 := 0.0

- Terminate Procedure: Optimal Value = 1.63202784619898e-14

-----  
Current Basic Variables: S17 S7 S21 S10 x3 S11 S1 S4 S9 S6 S5 S8  
S13 S16 S12 S15 S14 b0 S18 b1 S3 S20 S24 b2 S19

Current Objective Value: 1.63202784619898e-14

b0 := 0.33333333333343335  
b1 := 0.33333333333333337  
b2 := 0.33333333333323334  
x3 := 3.633333333335235  
S1 := 7.266666666670468  
S2 := 0.0  
S3 := 6.6333333333336036  
S4 := 0.63333333333344339  
S5 := 6.1333333333372355  
S6 := 1.1333333333332318  
S7 := 5.7333333333336034  
S8 := 1.53333333333344346  
S9 := 5.6999999999996005  
S10 := 1.5666666666708675  
S11 := 4.9333333333334934  
S12 := 2.33333333333355344  
S13 := 4.8666666666668667  
S14 := 2.4000000000001798  
S15 := 3.9999999999987015  
S16 := 3.2666666666717687  
S17 := 2.9666666666638672  
S18 := 4.3000000000006597  
S19 := 2.166666666666467  
S20 := 5.1000000000004002  
S21 := 0.33333333333313336  
S22 := 0.0  
S23 := 0.0  
S24 := 0.0  
S25 := 0.0  
A1 := 0.0  
A2 := 0.0  
A3 := 0.0  
A4 := 0.0  
A5 := 0.0  
A6 := 0.0  
A7 := 0.0  
A8 := 0.0  
A9 := 0.0  
A10 := 0.0  
A11 := 0.0  
A12 := 0.0  
A13 := 0.0  
A14 := 0.0



Run the Vanilla Simplex Method or the 2st step of Two Step Method  
Initialize the zero-th row:

---

Current Basic Variables: S17 S7 S21 S10 x3 S11 S1 S4 S9 S6 S5 S8  
S13 S16 S12 S15 S14 b0 S18 b1 S3 S20 S24 b2 S19

Current Objective Value: 3.633333333335235

b0 := 0.33333333333433335  
b1 := 0.33333333333333337  
b2 := 0.33333333333233334  
x3 := 3.633333333335235  
S1 := 7.266666666670468  
S2 := 0.0  
S3 := 6.633333333336036  
S4 := 0.6333333333344339  
S5 := 6.1333333333372355  
S6 := 1.133333333332318  
S7 := 5.733333333336034  
S8 := 1.5333333333344346  
S9 := 5.6999999999996005  
S10 := 1.5666666666708675  
S11 := 4.933333333334934  
S12 := 2.333333333335344  
S13 := 4.866666666668667  
S14 := 2.400000000001798  
S15 := 3.9999999999987015  
S16 := 3.2666666666717687  
S17 := 2.9666666666638672  
S18 := 4.3000000000006597  
S19 := 2.166666666666467  
S20 := 5.100000000004002  
S21 := 0.33333333333133336  
S22 := 0.0  
S23 := 0.0  
S24 := 0.0  
S25 := 0.0

- Terminate Procedure: Optimal Value = 3.633333333335235

---

Current Basic Variables: S17 S7 S21 S10 x3 S11 S1 S4 S9 S6 S5 S8  
S13 S16 S12 S15 S14 b0 S18 b1 S3 S20 S24 b2 S19

Current Objective Value: 3.633333333335235

b0 := 0.33333333333433335  
b1 := 0.33333333333333337  
b2 := 0.33333333333233334  
x3 := 3.633333333335235  
S1 := 7.266666666670468  
S2 := 0.0  
S3 := 6.633333333336036  
S4 := 0.6333333333344339  
S5 := 6.1333333333372355  
S6 := 1.133333333332318  
S7 := 5.733333333336034  
S8 := 1.5333333333344346  
S9 := 5.6999999999996005  
S10 := 1.5666666666708675

S11 := 4.9333333333334934  
S12 := 2.3333333333335344  
S13 := 4.8666666666668667  
S14 := 2.4000000000001798  
S15 := 3.9999999999987015  
S16 := 3.2666666666717687  
S17 := 2.9666666666638672  
S18 := 4.3000000000006597  
S19 := 2.166666666666467  
S20 := 5.100000000004002  
S21 := 0.333333333333133336  
S22 := 0.0  
S23 := 0.0  
S24 := 0.0  
S25 := 0.0