```
2.0
         x_8
    3.0
         +2.000000x_1 -1.000000x_2 +1.000000x_3 +2.000000x_4
                                                            +1.000000x_6
x_9
    7.0
                             +2.000000x_3 +2.000000x_4 -2.000000x_5 +1.000000x_6 +2.000000x_7
         -3.000000x_1
x_{10}
x_{11}
    14.0
         -1.000000x_1 - 2.000000x_2
                                        -1.000000x_4 -3.000000x_5 -3.000000x_6 +2.000000x_7
    14.0
         x_{12}
    10.0
         x_{13}
    1.0
         -2.000000x_1
                             +1.000000x_3 +2.000000x_4 +1.000000x_5 -1.000000x_6 -3.000000x_7
x_{14}
x_{15}
    9.0
         -3.000000x_1 - 3.000000x_2 - 2.000000x_3 + 2.000000x_4 + 3.000000x_5 - 2.000000x_6
         +3.000000x_1 -1.000000x_2 +1.000000x_3 -2.000000x_4
    13.0
                                                            +1.000000x_6 +1.000000x_7
x_{16}
x_{1\underline{7}}
    8.0
         -3.000000x_1 + 1.000000x_2 + 1.000000x_3 + 1.000000x_4 + 2.000000x_5 + 1.000000x_6
    0.0
         +1.000000x_1 -1.000000x_2 -2.000000x_3
                                                  -1.000000x_5 + 1.000000x_6 - 1.000000x_7
```

No initialization required –; Proceed to Optimize.

```
x_8
      2.0
            -1.000000x_1 + 1.000000x_2 + 3.000000x_3 + 1.000000x_4 + 2.000000x_5 - 2.000000x_6 + 3.000000x_7
      3.0
            +2.000000x_1 -1.000000x_2 +1.000000x_3 +2.000000x_4
                                                                                  +1.000000x_6
x_9
      7.0
            -3.000000x_1
                                        +2.000000x_3 +2.000000x_4 -2.000000x_5 +1.000000x_6 +2.000000x_7
x_{10}
      14.0
            -1.000000x_1 - 2.000000x_2
                                                      -1.000000x_4 -3.000000x_5 -3.000000x_6 +2.000000x_7
x_{11}
x_{12}
      14.0
            +2.000000x_1 - 3.000000x_2 + 2.000000x_3 - 1.000000x_4 - 3.000000x_5 - 2.000000x_6 - 3.000000x_7
            -3.000000x_1 + 2.000000x_2 + 2.000000x_3 - 2.000000x_4 + 3.000000x_5 + 2.000000x_6 - 1.000000x_7
      10.0
x_{13}
x_{14}
      1.0
                                        +1.000000x_3 +2.000000x_4 +1.0000000x_5 -1.000000x_6 -3.000000x_7
      9.0
            -3.000000x_1 - 3.000000x_2 - 2.000000x_3 + 2.000000x_4 + 3.000000x_5 - 2.000000x_6
x_{15}
x_{16}
      13.0
            +3.000000x_1 -1.000000x_2 +1.000000x_3 -2.000000x_4
                                                                                   +1.000000x_6 +1.000000x_7
      8.0
            -3.000000x_1 + 1.000000x_2 + 1.000000x_3 + 1.000000x_4 + 2.000000x_5 + 1.000000x_6
x_{17}
      0.0
            +1.000000x_1 -1.000000x_2 -2.000000x_3
                                                                    -1.000000x_5 + 1.000000x_6 - 1.000000x_7
 z
```

 x_1 enters and x_{14} leaves

```
1.5
    +0.500000x_{14} +1.000000x_2 +2.500000x_3
                           +1.500000x_5 -1.500000x_6 +4.500000x_7
x_8
  4.0
    -1.000000x_{14} - 1.000000x_2 + 2.000000x_3 + 4.000000x_4 + 1.000000x_5
                                      -3.000000x_7
x_9
  5.5
                +0.500000x_3 -1.000000x_4 -3.500000x_5 +2.500000x_6 +6.500000x_7
    +1.500000x_{14}
x_{10}
  13.5
    x_{11}
  15.0
    x_{12}
    x_{13}
  8.5
  0.5
    -0.500000x_{14}
                +0.500000x_3+1.000000x_4+0.500000x_5-0.500000x_6-1.500000x_7
x_1
  7.5
    x_{15}
    x_{16}
  14.5
    6.5
x_{17}
    0.5
```

 x_4 enters and x_{13} leaves

```
+0.500000x_{14} +1.000000x_2 +2.500000x_3
  1.5
                        +1.500000x_5 -1.500000x_6 +4.500000x_7
x_8
  10.8
    x_9
  3.8
    x_{10}
  10.1
    -0.100000x_{14} - 2.800000x_2 - 0.700000x_3 + 0.400000x_{13} - 4.100000x_5 - 3.900000x_6 + 2.100000x_7
x_{11}
    16.7
x_{12}
    x_4
  1.7
  2.2
    x_1
x_{15}
    5.8
  16.2
    -1.200000x_{14} - 0.600000x_2 + 2.600000x_3 - 0.200000x_{13} + 1.800000x_5 + 0.200000x_6 - 2.800000x_7
x_{16}
    3.1
x_{17}
  2.2
```

 x_6 enters and x_8 leaves

```
+1.000000x_5 -0.666667x_8 +3.000000x_7
    1.0
        +0.333333x_{14} +0.666667x_2 +1.666667x_3
x_6
    13.6
        +1.133333x_{14} + 2.466667x_2 + 7.066667x_3 - 0.800000x_{13} + 5.000000x_5 - 1.866667x_8 + 8.200000x_7
x_9
x_{10}
    5.6
        6.2
        -1.400000x_{14} - 5.400000x_2 - 7.200000x_3 + 0.400000x_{13} - 8.000000x_5 + 2.600000x_8 - 9.600000x_7
x_{11}
    14.4
        x_{12}
        +0.5333333x_{14} + 0.866667x_2 + 1.266667x_3 - 0.200000x_{13} + 1.000000x_5 - 0.466667x_8 + 2.800000x_7
    2.4
x_4
    2.4
        x_1
x_{15}
    4.6
        +0.800000x_{14} -4.200000x_2 -5.600000x_3 +0.200000x_{13}
                                                          +0.800000x_8 +0.200000x_7
x_{16}
    16.4
        -1.133333x_{14} - 0.466667x_2 + 2.9333333x_3 - 0.200000x_{13} + 2.000000x_5 - 0.133333x_8 - 2.200000x_7
    4.2
        +1.266667x_{14} + 0.933333x_2 + 1.133333x_3 + 0.400000x_{13} + 1.000000x_5 - 0.733333x_8 + 6.400000x_7
x_{17}
    3.4
        z
```

 x_2 enters and x_{15} leaves

```
1.73015873016
                                                      +0.460317x_{14} - 0.158730x_{15} + 0.777778x_3 + 0.031746x_{13} + 1.000000x_5 - 0.539683x_8 + 3.031746x_7
 x_6
                                                      x_9
              16.3015873016
              6.47619047619
                                                      x_{10}
                                                       -2.428571x_{14} + 1.285714x_{15} - 0.000000x_3 + 0.142857x_{13} - 8.000000x_5 + 1.571429x_8 - 9.857143x_7
x_{11}
             0.285714285714
              9.87301587302
                                                      -2.253968x_{14} + 0.984127x_{15} + 4.777778x_3 - 0.396825x_{13} - 4.000000x_5 + 0.746032x_8 - 12.396825x_{13} - 4.000000x_5 + 0.746032x_8 - 12.396825x_{13} - 12.396825x_{13
x_{12}
x_4
              3.34920634921
                                                      +0.698413x_{14} - 0.206349x_{15} + 0.1111111x_3 - 0.158730x_{13} + 1.000000x_5 - 0.301587x_8 + 2.841270x_7
              2.98412698413
                                                       x_1
 x_2
              1.09523809524
                                                      +0.190476x_{14} -0.238095x_{15} -1.333333x_3 +0.047619x_{13}
                                                                                                                                                                                                                      +0.190476x_8 +0.047619x_7
              15.888888889
                                                       x_{16}
x_{17}
              5.2222222222
                                                      +1.444444x_{14} -0.222222x_{15} -0.111111x_3 +0.444444x_{13} +1.000000x_5 -0.555556x_8 +6.444444x_7
                                                      +0.238095x_{14} - 0.047619x_{15} + 0.333333x_3 - 0.190476x_{13} + 1.000000x_5 - 0.761905x_8 + 1.809524x_7
              3.61904761905
```

 x_3 enters and x_2 leaves

```
2.36904761905
                                                                                                                                                                       +0.571429x_{14} - 0.297619x_{15} - 0.583333x_2 + 0.059524x_{13} + 1.000000x_5 - 0.428571x_8 + 3.059524x_7 + 0.059524x_7 + 0.05062x_7 + 0.050
  x_6
  x_9
                                             19.4047619048
                                                                                                                                                                      +2.142857x_{14} - 1.261905x_{15} - 2.833333x_2 - 0.547619x_{13} + 5.000000x_5 - 0.857143x_8 + 8.452381x_7 + 2.142857x_{14} - 1.261905x_{15} - 2.833333x_2 - 0.547619x_{13} + 5.000000x_5 - 0.857143x_8 + 8.452381x_7 + 2.142857x_{14} - 1.261905x_{15} - 2.833333x_2 - 0.547619x_{13} + 5.0000000x_5 - 0.857143x_8 + 8.452381x_7 + 2.142857x_{14} - 1.261905x_{15} - 2.833333x_2 - 0.547619x_{13} + 5.0000000x_5 - 0.857143x_8 + 8.452381x_7 + 2.142857x_{15} - 2.83333x_2 - 0.547619x_{13} + 5.0000000x_5 - 0.857143x_8 + 8.452381x_7 + 2.142857x_{15} - 2.83333x_2 - 0.547619x_{15} - 2.83333x_2 - 0.547619x_{15} - 2.83333x_2 - 0.547619x_{15} - 2.8333x_2 - 0.857143x_8 + 8.452381x_7 + 2.142857x_{15} - 2.8333x_2 - 0.547619x_{15} - 2.8333x_2 - 0.547619x_{15} - 2.833x_2 - 0.547619x_{15} - 2.833x_2 - 0.857143x_8 + 8.452381x_7 + 2.142857x_{15} - 2.833x_2 - 0.547619x_{15} - 2.833x_2 - 0.547619x_{15} - 2.833x_2 - 0.547619x_{15} - 2.833x_2 - 0.547619x_{15} - 2.83761x_{15} - 2
                                                                                                                                                                       8.39285714286
 x_{10}
x_{11}
                                        0.285714285714
                                                                                                                                                                      -2.428571x_{14} + 1.285714x_{15} + 0.000000x_2 + 0.142857x_{13} - 8.000000x_5 + 1.571429x_8 - 9.857143x_7
                                                                                                                                                                       -1.571429x_{14} + 0.130952x_{15} - 3.583333x_2 - 0.226190x_{13} - 4.000000x_5 + 1.428571x_8 - 12.226190x_7 + 1.428571x_8 - 1.428
                                            13.7976190476
 x_{12}
                                             3.44047619048
                                                                                                                                                                      +0.714286x_{14} - 0.226190x_{15} - 0.083333x_2 - 0.154762x_{13} + 1.000000x_5 - 0.285714x_8 + 2.845238x_7 + 2.84528x_7 + 2.84568x_7 + 2.84566x_7 + 2.84566x_7 + 2.84566x_7 + 2.84566x_7 + 2.8456x_7 + 2.8456x_7 + 2.8456x_7 + 2.8456x_7 + 2.8456x_7 + 2.8456x_7 + 2
  x_4
                                            3.166666666667
                                                                                                                                                                       x_1
  x_3
                                        0.821428571429
                                                                                                                                                                      +0.142857x_{14} -0.178571x_{15} -0.750000x_2 +0.035714x_{13}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               +0.142857x_8 +0.035714x_7
                                            18.8095238095
                                                                                                                                                                       -0.714286x_{14} - 0.523810x_{15} - 2.666667x_2 - 0.095238x_{13} + 2.000000x_5 + 0.285714x_8 - 2.095238x_7
 x_{16}
                                            5.13095238095
                                                                                                                                                                       x_{17}
                                            3.89285714286
                                                                                                                                                                       +0.285714x_{14} - 0.107143x_{15} - 0.250000x_2 - 0.178571x_{13} + 1.000000x_5 - 0.714286x_8 + 1.821429x_7
```

 x_5 enters and x_{11} leaves

```
2.40476190476
 x_6
                         19.5833333333
                                                                                            +0.625000x_{14} - 0.458333x_{15} - 2.833333x_2 - 0.458333x_{13} - 0.625000x_{11} + 0.125000x_8 + 2.291667x_7
 x_9
x_{10}
                         8.32142857143
                                                                                            +2.892857x_{14} - 0.928571x_{15} - 1.750000x_2 + 0.285714x_{13} + 0.250000x_{11} - 1.107143x_8 + 13.785714x_{73} + 0.2500000x_{11} - 1.107143x_8 + 13.785714x_{73} + 0.250000x_{11} + 0.2500
                     0.0357142857143
                                                                                           x_5
                                                                                            13.6547619048
x_{12}
                                                                                            3.47619047619
 x_4
                                                                                            x_1
                         3.20238095238
 x_3
                       0.821428571429
                                                                                            +0.142857x_{14} -0.178571x_{15} -0.750000x_2 +0.035714x_{13}
                                                                                                                                                                                                                                                                                                                                                              +0.142857x_8 +0.035714x_7
x_{16}
                           18.880952381
                                                                                            -1.321429x_{14} - 0.202381x_{15} - 2.666667x_2 - 0.059524x_{13} - 0.250000x_{11} + 0.678571x_8 - 4.559524x_{7}
                                                                                            +1.125000x_{14} - 0.041667x_{15} + 0.083333x_2 + 0.458333x_{13} - 0.125000x_{11} - 0.375000x_8 + 5.208333x_7 + 0.0000x_{11} + 0.0000x_{12} + 0.0000x_{13} + 0.0000x_{11} + 0.0000x_{12} + 0.0000x_{13} 
                         5.16666666667
 x_{17}
                         3.92857142857
                                                                                            z
```

 x_7 enters and x_5 leaves

```
x_6
                             2.4577294686
                                                                                                     -0.182367x_{14} + 0.101449x_{15} - 0.583333x_2 + 0.103865x_{13} - 0.310386x_{11} + 0.059179x_8 - 1.483092x_{15} + 0.059179x_{15} + 0.059177x_{15} + 0.05917x_{15} + 0.0577x_{15} + 0.0577x_{15} + 0.0577x_{15} + 0.0577x_
                                                                                                     +0.060386x_{14} - 0.159420x_{15} - 2.833333x_2 - 0.425121x_{13} - 0.857488x_{11} + 0.490338x_8 - 1.859903x_5
 x_9
                           19.6497584541
                           8.72101449275
                                                                                                     x_{10}
                                                                                                     -0.246377x_{14} + 0.130435x_{15} + 0.000000x_2 + 0.014493x_{13} - 0.101449x_{11} + 0.159420x_8 - 0.811594x_5
                      0.0289855072464
x_7
                             13.443236715
                                                                                                     +1.440821x_{14} - 1.463768x_{15} - 3.583333x_2 - 0.403382x_{13} + 1.240338x_{11} - 0.520531x_8 + 5.922705x_5
x_{12}
x_4
                             3.5229468599
                                                                                                     +0.013285x_{14} + 0.144928x_{15} - 0.083333x_2 - 0.113527x_{13} - 0.288647x_{11} + 0.167874x_8 - 1.309179x_5
                           3.16183574879
                                                                                                     +0.041063x_{14} - 0.188406x_{15} - 0.166667x_2 - 0.169082x_{13} + 0.016908x_{11} - 0.026570x_8 + 1.135266x_5
x_1
 x_3
                         0.822463768116
                                                                                                     +0.134058x_{14} - 0.173913x_{15} - 0.750000x_2 + 0.036232x_{13} - 0.003623x_{11} + 0.148551x_8 - 0.028986x_5
                           18.7487922705
                                                                                                     -0.198068x_{14} - 0.797101x_{15} - 2.666667x_2 - 0.125604x_{13} + 0.212560x_{11} - 0.048309x_8 + 3.700483x_{15} + 0.048309x_{15} + 0.048300x_{15} + 0.04800x_{15} + 0.04800x_{15} + 0.04800x_{15} + 0.04800x_{15} + 0.04800x_{15} + 0.04800x_{15} 
x_{16}
                           5.31763285024
                                                                                                     -0.158213x_{14} + 0.637681x_{15} + 0.083333x_2 + 0.533816x_{13} - 0.653382x_{11} + 0.455314x_8 - 4.227053x_5
x_{17}
                                                                                                     -0.163043x_{14} + 0.130435x_{15} - 0.250000x_2 - 0.152174x_{13} - 0.184783x_{11} - 0.423913x_8 - 0.478261x_5
                           3.94565217391
```

 x_{15} enters and x_3 leaves

```
2.9375
                                                                                 x_6
 x_9
                                                                                 -0.062500x_{14} + 0.916667x_3 - 2.145833x_2 - 0.458333x_{13} - 0.854167x_{11} + 0.354167x_8 - 1.833333x_5 - 0.854167x_{11} + 0.854167x_{12} + 0.854167x_{13} + 0.854167x_{14} + 0.854167x_{15} 
                      18.8958333333
                     12.8333333333
                                                                                 x_{10}
 x_7
                   0.6458333333333
                                                                                 6.520833333333
x_{12}
                     4.20833333333
                                                                                 x_4
                     2.270833333333
                                                                                 -0.104167x_{14} + 1.083333x_3 + 0.645833x_2 - 0.208333x_{13} + 0.020833x_{11} - 0.187500x_8 + 1.166667x_5 + 0.000833x_{11} + 0.000833x_{12} + 0.000833x_{13} + 0.000833x_{13} + 0.000833x_{13} + 0.000833x_{13} + 0.000833x_{13} + 0.000833x_{13} + 0.00083x_{13} + 0.0008x_{13} + 0.
 x_1
x_{15}
                     4.72916666667
                                                                                 14.9791666667
x_{16}
                     8.33333333333
                                                                                 x_{17}
                                                                                 4.5625
```

 x_{-1} enters and Final Dictionary Solution: 4.5625 Num Pivots: 8