```
3.0
       +2.000000x_1 +3.000000x_2 -1.000000x_3
                                         +2.000000x_5 +1.000000x_6 +2.000000x_7
x_8
       13.0
x_9
   14.0
                        +3.000000x_3 +3.000000x_4 -2.000000x_5 +2.000000x_6 +1.000000x_7
       -2.000000x_1
x_{10}
x_{11}
   4.0
       +1.000000x_1 +1.000000x_2 -1.000000x_3 -3.000000x_4
                                                           -2.000000x_7
       9.0
x_{12}
    4.0
       x_{13}
    2.0
       x_{14}
x_{15}
    1.0
                -1.000000x_2 + 2.000000x_3 + 1.000000x_4 - 1.000000x_5 + 2.000000x_6
                        +3.000000x_3 +2.000000x_4
    1.0
       -2.000000x_1
                                                  -3.000000x_6 + 2.000000x_7
x_{16}
    2.0
       -1.000000x_1 - 2.000000x_2 - 1.000000x_3
                                          -1.000000x_5
                                                           +3.000000x_7
x_{17}
   0.0
       +1.000000x_1 +2.000000x_2
                                 -2.000000x_4 - 1.000000x_5
                                                           -2.000000x_7
z
```

No initialization required –; Proceed to Optimize.

```
x_8
         +2.000000x_1 +3.000000x_2 -1.000000x_3
                                                +2.000000x_5 +1.000000x_6 +2.000000x_7
    13.0
         -3.000000x_1 + 2.000000x_2 - 1.000000x_3 + 3.000000x_4 + 1.000000x_5 + 1.000000x_6 + 1.000000x_7
x_9
    14.0
                            +3.000000x_3 +3.000000x_4 -2.000000x_5 +2.000000x_6 +1.000000x_7
x_{10}
         +1.000000x_1 +1.000000x_2 -1.000000x_3 -3.000000x_4
    4.0
                                                                    -2.000000x_7
x_{11}
         x_{12}
    9.0
         4.0
x_{13}
x_{14}
    2.0
         1.0
                   -1.000000x_2 + 2.000000x_3 + 1.000000x_4 - 1.000000x_5 + 2.000000x_6
x_{15}
    1.0
         -2.000000x_1
                            +3.000000x_3 +2.000000x_4
                                                          -3.000000x_6 + 2.000000x_7
x_{16}
    2.0
         -1.000000x_1 -2.000000x_2 -1.000000x_3
                                                -1.000000x_5
                                                                    +3.000000x_7
x_{17}
    0.0
         +1.000000x_1 +2.000000x_2
                                      -2.000000x_4 - 1.000000x_5
                                                                    -2.000000x_7
z
```

 x_1 enters and x_{16} leaves

```
4.0
        x_8
   11.5
       +1.500000x_{16} +2.000000x_2 -5.500000x_3
                                            +1.000000x_5 +5.500000x_6 -2.000000x_7
x_9
   13.0
                                   +1.000000x_4 -2.000000x_5 +5.000000x_6 -1.000000x_7
       +1.000000x_{16}
x_{10}
   4.5
        -0.500000x_{16} + 1.000000x_2 + 0.500000x_3 - 2.000000x_4
                                                     -1.500000x_6 - 1.000000x_7
x_{11}
                                            -2.000000x_5 - 7.500000x_6 + 1.000000x_7
   10.5
       -1.500000x_{16} - 2.000000x_2 + 6.500000x_3
x_{12}
   3.0
        x_{13}
   0.5
        x_{14}
    1.0
                 -1.000000x_2 + 2.000000x_3 + 1.000000x_4 - 1.000000x_5 + 2.000000x_6
x_{15}
   0.5
        -0.500000x_{16}
                          +1.500000x_3 +1.000000x_4
                                                     -1.500000x_6 + 1.000000x_7
x_1
    1.5
        +0.500000x_{16} - 2.000000x_2 - 2.500000x_3 - 1.000000x_4 - 1.000000x_5 + 1.500000x_6 + 2.000000x_7
x_{17}
        0.5
```

 x_2 enters and x_{17} leaves

```
6.25
     x_8
  13.0
     +2.000000x_{16} -1.000000x_{17} -8.000000x_3 -1.000000x_4
                                      +7.000000x_6
x_9
                         +1.000000x_4 -2.000000x_5 +5.000000x_6 -1.000000x_7
  13.0
     +1.000000x_{16}
x_{10}
x_{11}
  5.25
     -0.250000x_{16} - 0.500000x_{17} - 0.750000x_3 - 2.500000x_4 - 0.500000x_5 - 0.750000x_6
     9.0
x_{12}
     x_{13}
  1.5
  1.25
     x_{14}
x_{15}
  0.25
     0.5
     -0.500000x_{16}
                   +1.500000x_3 +1.000000x_4
                                      -1.500000x_6 + 1.000000x_7
x_1
     0.75
x_2
  2.0
            -1.000000x_{17} -1.000000x_3 -2.000000x_4 -2.000000x_5
z
                                            +1.000000x_7
```

 x_7 enters and x_{15} leaves

```
-2.000000x_{16} + 2.000000x_{17} + 21.000000x_3 + 11.000000x_4 - 3.000000x_5 + 9.000000x_6 - 7.000000x_{15}
     8.0
x_8
    13.0
          +2.000000x_{16} -1.000000x_{17} -8.000000x_3 -1.000000x_4
x_9
                                                                   +7.0000000x_6
x_{10}
    12.75
          +1.250000x_{16} - 0.500000x_{17} - 3.250000x_3 - 0.500000x_4 - 1.500000x_5 + 3.750000x_6 + 1.000000x_{15}
    5.25
          -0.250000x_{16} - 0.500000x_{17} - 0.750000x_3 - 2.500000x_4 - 0.500000x_5 - 0.750000x_6
x_{11}
     8.75
          x_{12}
    0.25
          x_{13}
    0.25
          +2.750000x_{16} - 2.500000x_{17} - 19.750000x_3 - 11.500000x_4 + 2.500000x_5 - 1.750000x_6 + 4.000000x_{15}
x_{14}
    0.25
x_7
          -0.250000x_{16} + 0.500000x_{17} + 3.250000x_3 + 1.500000x_4 - 0.500000x_5 + 1.250000x_6 - 1.000000x_{15}
    0.75
          -0.750000x_{16} + 0.500000x_{17} + 4.750000x_3 + 2.500000x_4 - 0.500000x_5 - 0.250000x_6 - 1.000000x_{15}
x_1
     1.0
                                 +2.000000x_3 +1.000000x_4 -1.000000x_5 +2.000000x_6 -1.000000x_{15}
x_2
    2.25
          z
```

 x_3 enters and x_{14} leaves

```
8.26582278481
                                                                                                                                    +0.924051x_{16} - 0.658228x_{17} - 1.063291x_{14} - 1.227848x_4 - 0.341772x_5 + 7.139241x_6 - 2.746835x_{15}
 x_8
                                                                                                                                    x_9
                                    12.8987341772
                                    12.7088607595
                                                                                                                                    +0.797468x_{16} -0.088608x_{17} +0.164557x_{14} +1.392405x_4 -1.911392x_5 +4.037975x_6 +0.341772x_{15} +0.088608x_{17} +0.08
x_{10}
                                                                                                                                    5.24050632911
x_{11}
                                    8.82278481013
                                                                                                                                    -0.949367x_{16} - 0.227848x_{17} - 0.291139x_{14} - 3.848101x_4 + 0.227848x_5 - 10.759494x_6 + 2.164557x_{15} + 2.164557x_{15} + 2.164557x_{15} + 2.164557x_{15} + 2.16457x_{15} + 2.1647x_{15} + 2.16
x_{12}
                             0.0253164556962
                                                                                                                                    -0.721519x_{16} + 0.746835x_{17} + 0.898734x_{14} + 4.835443x_4 - 0.746835x_5 - 5.177215x_6 + 1.405063x_{15}
x_{13}
                            0.0126582278481
                                                                                                                                   x_3
 x_7
                                0.291139240506
                                                                                                                                    +0.202532x_{16} + 0.088608x_{17} - 0.164557x_{14} - 0.392405x_4 - 0.088608x_5 + 0.962025x_6 - 0.341772x_{15} + 0.088608x_{17} - 0.088608x_{1
                                0.810126582278
                                                                                                                                    x_1
                                      1.0253164557
                                                                                                                                    +0.278481x_{16} - 0.253165x_{17} - 0.101266x_{14} - 0.164557x_4 - 0.746835x_5 + 1.822785x_6 - 0.594937x_{15}
  x_2
                                                                                                                                    +0.063291x_{16} -0.784810x_{17} -0.1139\overline{24x_{14} -1.810127x_4 -2.215190x_5 \ +1.050633x_6 \ -0.544304x_{15}}
                                    2.27848101266
```

 x_6 enters and x_{13} leaves

```
8.30073349633
                                                                                                                                                                                                                         x_8
                                                              12.9364303178
                                                                                                                                                                                                                         -0.188264x_{16} + 1.124694x_{17} + 1.743276x_{14} + 10.858191x_4 - 2.124694x_5 - 1.488998x_{13} + 0.471883x_{15} + 0.47188x_{15} + 0.47188x_{15} + 0.47188x_{15} + 0.47188x_{15} + 0.4718x_{15} + 0.47188x_{15} + 0.4718x_{15} + 0.4718x_
  x_9
                                                                                                                                                                                                                        12.728606357
 x_{10}
                                                              5.23716381418
                                                                                                                                                                                                                         -0.259169x_{16} - 0.503667x_{17} - 0.080685x_{14} - 2.701711x_4 - 0.496333x_5 + 0.132029x_{13} - 0.337408x_{15}
x_{11}
                                                                                                                                                                                                                         +0.550122x_{16} - 1.779951x_{17} - 2.158924x_{14} - 13.897311x_4 + 1.779951x_5 + 2.078240x_{13} - 0.755501x_{15} + 2.078240x_{15} + 0.078240x_{15} + 0.078240
                                                              8.77017114914
 x_{12}
                                               0.00488997555012
                                                                                                                                                                                                                         x_6
                                                                                                                                                                                                                        +0.151589x_{16} -0.139364x_{17} -0.066015x_{14} \\ -0.665037x_4 \\ +0.139364x_5 +0.017115x_{13} \\ +0.178484x_{15} +0.017115x_{15} \\ +0.017115x_{15} +0.017115x_{15} +0.017115x_{15} \\ +0.017115x_{15} +0.017115x_{15} +0.017115x_{15} \\ +0.017115x_{15} +0.017115x_{
                                                    0.0122249388753
    x_3
                                                          0.295843520782
                                                                                                                                                                                                                         +0.068460x_{16} +0.227384x_{17} +0.002445x_{14} +0.506112x_4 -0.227384x_5 -0.185819x_{13} -0.080685x_{15} +0.006860x_{15} +0
    x_7
                                                                                                                                                                                                                         +0.004890x_{16} - 0.198044x_{17} - 0.356968x_{14} - 0.892421x_4 + 0.198044x_5 + 0.129584x_{13} - 0.220049x_{15} + 0.004890x_{16} - 0.004890x_{16} - 0.004890x_{16} + 0.004890x_{16} - 0.004890x_{16} + 0.00480x_{16} + 0.00480
                                                              0.80684596577
    x_1
                                                              1.03422982885
                                                                                                                                                                                                                         x_2
                                                              2.28361858191
                                                                                                                                                                                                                         -0.083130x_{16} - 0.633252x_{17} + 0.068460x_{14} - 0.828851x_4 - 2.366748x_5 - 0.202934x_{13} - 0.259169x_{15}
```

 x_{14} enters and x_3 leaves

```
+0.333333x_{16} - 0.000000x_{17} - 2.666667x_3 + 3.666667x_4 - 1.000000x_5 - 1.333333x_{13} - 0.333333x_{15}
               8.33333333333
 x_8
               13.2592592593
                                                         +3.814815x_{16} - 2.555556x_{17} - 26.407407x_3 - 6.703704x_4 + 1.555556x_5 - 1.037037x_{13} + 5.185185x_{15}
 x_9
x_{10}
               12.888888889
                                                         +2.222222x_{16} - 1.333333x_{17} - 13.111111x_3 - 3.555556x_4 - 0.666667x_5 - 0.555556x_{13} + 3.777778x_{15}
               5.2222222222
                                                         x_{11}
                                                         -4.407407x_{16} + 2.777778x_{17} + 32.703704x_3 + 7.851852x_4 - 2.777778x_5 + 1.518519x_{13} - 6.592593x_{15} + 1.518519x_{13} - 6.592593x_{15} + 1.518519x_{15} + 1.518518x_{15} + 1.51888x_{15} + 1.51888x_{15} + 1.5188x_{15} + 1.5188x_{15} + 1.5188x_{15} + 1.5188x_{15} + 1.51
x_{12}
               8.37037037037
                                                         0.037037037037
x_6
             0.185185185185
                                                         +2.296296x_{16} - 2.1111111x_{17} - 15.148148x_3 - 10.074074x_4 + 2.111111x_5 + 0.259259x_{13} + 2.703704x_{15}
x_{14}
 x_7
             0.296296296296
                                                         +0.074074x_{16} +0.222222x_{17} -0.037037x_3 +0.481481x_4 -0.222222x_5 -0.185185x_{13} -0.074074x_{15}
x_1
             0.740740740741
                                                          -0.814815x_{16} + 0.5555556x_{17} + 5.407407x_3 + 2.703704x_4 - 0.555556x_5 + 0.037037x_{13} - 1.185185x_{15}
               1.07407407407
                                                          +0.518519x_{16} - 0.444444x_{17} - 3.259259x_3 - 0.629630x_4 - 0.555556x_5 - 0.296296x_{13} + 0.481481x_{15}
 x_2
                                                          +0.074074x_{16} - 0.777778x_{17} - 1.037037x_3 - 1.518519x_4 - 2.222222x_5 - 0.185185x_{13} - 0.074074x_{15}
                2.2962962963
  z
```

 x_{16} enters and x_1 leaves

```
x_8
                        8.63636363636
                                                                                         -4.681818x_1 + 0.045455x_{17} - 1.090909x_3 + 5.954545x_4 - 1.045455x_5 - 0.863636x_{13} - 0.363636x_{15} + 0.045455x_{17} - 0.04545x_{17} - 0.0454x_{17} - 0.0454x_{1
 x_9
                        16.7272727273
                       14.9090909091
                                                                                         x_{10}
                                                                                         +0.545455x_1 - 0.636364x_{17} - 1.727273x_3 - 3.363636x_4 - 0.363636x_5 + 0.090909x_{13} + 0.090909x_{15}
x_{11}
                       4.81818181818
                                                                                         4.36363636364
x_{12}
                     0.272727272727
                                                                                          -0.318182x_1 - 0.045455x_{17} - 0.909091x_3 + 0.045455x_4 + 0.045455x_5 - 0.136364x_{13} + 0.363636x_{15}
 x_6
                       2.27272727273
                                                                                         x_{14}
                                                                                         x_7
                     0.363636363636
                     0.909090909091
                                                                                         -1.227273x_1 + 0.681818x_{17} + 6.636364x_3 + 3.318182x_4 - 0.681818x_5 + 0.045455x_{13} - 1.454545x_{15} + 0.045455x_{15} + 0.045456x_{15} + 0.04546x_{15} + 0.04546x
x_{16}
                        1.54545454545
                                                                                          -0.636364x_1 - 0.090909x_{17} + 0.181818x_3 + 1.090909x_4 - 0.909091x_5 - 0.272727x_{13} - 0.272727x_{15}
  x_2
                                                                                         -0.090909x_1 - 0.727273x_{17} - 0.545455x_3 - 1.272727x_4 - 2.272727x_5 - 0.181818x_{13} - 0.181818x_{15}
                       2.36363636364
```

 x_{-1} enters and Final Dictionary Solution: 2.363636364 Num Pivots: 7