```
14.0
                      +2.000000x_2 +2.000000x_3 -3.000000x_4 -1.000000x_5
x_8
     5.0
          x_9
     6.0
                      +1.000000x_2 +1.000000x_3 -3.000000x_4 +1.000000x_5 -3.000000x_6 -2.000000x_7
x_{10}
x_{11}
     14.0
          +1.000000x_1 +3.000000x_2 -3.000000x_3 -1.000000x_4
                                                                    -3.000000x_6 + 1.000000x_7
     1.0
                      +3.000000x_2
                                             +1.000000x_4 -2.000000x_5 -3.000000x_6 +1.000000x_7
x_{12}
     6.0
          +3.0000000x_1 + 1.0000000x_2 - 3.0000000x_3 + 1.0000000x_4 + 1.0000000x_5 + 3.0000000x_6 + 1.0000000x_7
x_{13}
     13.0
          x_{14}
x_{15}
     5.0
                      -1.000000x_2 + 2.000000x_3 - 2.000000x_4 - 3.000000x_5 - 1.000000x_6 - 3.000000x_7
          +3.000000x_1 +2.0000000x_2 -3.0000000x_3 +3.0000000x_4
                                                                    -1.000000x_6 + 3.000000x_7
     5.0
x_{16}
x_{1\underline{7}}
     1.0
          -2.000000x_1 + 3.000000x_2 + 2.000000x_3 - 3.000000x_4
                                                                               -1.000000x_7
     0.0
                      -2.000000x_2 -1.000000x_3 -1.000000x_4
 z
                                                                    +2.000000x_6 +2.000000x_7
```

No initialization required –; Proceed to Optimize.

```
x_8
     14.0
                     +2.000000x_2 +2.000000x_3 -3.000000x_4 -1.000000x_5
     5.0
          x_9
     6.0
                      x_{10}
     14.0
          +1.000000x_1 +3.000000x_2 -3.000000x_3 -1.000000x_4
                                                                    -3.000000x_6 + 1.000000x_7
x_{11}
x_{12}
     1.0
                     +3.000000x_2
                                            +1.000000x_4 -2.000000x_5 -3.000000x_6 +1.000000x_7
          +3.000000x_1 + 1.000000x_2 - 3.000000x_3 + 1.000000x_4 + 1.000000x_5 + 3.000000x_6 + 1.000000x_7
     6.0
x_{13}
x_{14}
     13.0
          -3.0000000x_1 + 1.000000x_2 + 2.000000x_3 - 3.000000x_4 + 3.000000x_5 + 3.000000x_6 + 3.000000x_7
     5.0
                      -1.000000x_2 + 2.000000x_3 - 2.000000x_4 - 3.000000x_5 - 1.000000x_6 - 3.000000x_7
x_{15}
x_{16}
     5.0
          +3.000000x_1 +2.000000x_2 -3.000000x_3 +3.000000x_4
                                                                    -1.000000x_6 + 3.000000x_7
                                                                               -1.000000x_7
     1.0
          -2.000000x_1 + 3.000000x_2 + 2.000000x_3 - 3.000000x_4
x_{17}
     0.0
                      -2.000000x_2 -1.000000x_3 -1.000000x_4
                                                                    +2.000000x_6 +2.000000x_7
 z
```

 x_6 enters and x_{12} leaves

```
14.0
                                                                                                      +2.000000x_2 +2.000000x_3 -3.000000x_4 -1.000000x_5
 x_8
                 4.333333333333
                                                                 +1.000000x_1 -3.000000x_2 +3.000000x_3 +1.333333x_4 +4.333333x_5 +0.666667x_{12} -2.666667x_{13} -2.666667x_{13} -2.666667x_{14} -2.666667x_{15} -2.66667x_{15} -2.666667x_{15} -2.66667x_{15} -2.666667x_{15} -2.666667x_{15} -2.666667x_{15} -2.66667x_{15} -2.66667x_{15} -2.66667x_{15} -2.66667x_{15} -2.666667x_{15} -2.66667x_{15} -2.66667x_{15} -2.66667x_{15} -2.66667x_{15} -2.66667x_{15} -2.666
 x_9
                                                                                                      -2.000000x_2 + 1.000000x_3 - 4.000000x_4 + 3.000000x_5 + 1.000000x_{12} - 3.000000x_7
                                 5.0
x_{10}
                                                                                                                                           -3.000000x_3 -2.000000x_4 +2.000000x_5 +1.000000x_{12}
                                13.0
                                                                 +1.000000x_1
x_{11}
               0.3333333333333
                                                                                                                                                                               +0.333333x_4 -0.666667x_5 -0.3333333x_{12} +0.3333333x_7
                                                                                                      +1.000000x_2
 x_6
                                 7.0
                                                                 x_{13}
                                                                 14.0
x_{14}
                 4.66666666667
                                                                                                      -2.000000x_2 + 2.000000x_3 - 2.333333x_4 - 2.333333x_5 + 0.333333x_{12} - 3.333333x_7
x_{15}
                                                                 4.6666666667
x_{16}
                                                                  -2.000000x_1 + 3.0000000x_2 + 2.0000000x_3 - 3.0000000x_4
                                 1.0
x_{17}
                                                                                                                                           -1.000000x_3 - 0.333333x_4 - 1.333333x_5 - 0.666667x_{12} + 2.666667x_7
               0.66666666667
   z
```

 x_7 enters and x_{17} leaves

```
14.0
                                                                                                                                                                                                                                      +2.000000x_2 +2.000000x_3 -3.000000x_4 -1.000000x_5
  x_8
                                                                                                                                                +6.333333x_1 - 11.000000x_2 - 2.3333333x_3 + 9.333333x_4 + 4.333333x_5 + 0.666667x_{12} + 2.666667x_{17} +
                                       1.66666666667
  x_9
                                                                        2.0
                                                                                                                                                 +6.000000x_1 - 11.000000x_2 - 5.000000x_3 + 5.000000x_4 + 3.000000x_5 + 1.000000x_{12} + 3.000000x_{17}
 x_{10}
x_{11}
                                                                     13.0
                                                                                                                                                 +1.000000x_1
                                                                                                                                                                                                                                                                                                                              -3.000000x_3 -2.000000x_4 +2.000000x_5 +1.000000x_{12}
                                 0.66666666667
                                                                                                                                                x_6
                                                                       9.0
                                                                                                                                                 x_{13}
                                                                     18.0
                                                                                                                                              x_{14}
x_{15}
                                      1.33333333333
                                                                                                                                                +6.666667x_1 - 12.000000x_2 - 4.666667x_3 + 7.666667x_4 - 2.333333x_5 + 0.333333x_{12} + 3.333333x_{17} + 3.33333x_{17} + 3.3333x_{17} + 3.333x_{17} + 3.333x_{17} + 3.333x_{17} + 3.33x_{17} 
                                                                                                                                                7.33333333333
 x_{16}
  x_{7}
                                                                                                                                                 -2.000000x_1 +3.000000x_2 +2.000000x_3 -3.000000x_4
                                                                        1.0
        z
                                     3.33333333333
                                                                                                                                                 -5.333333x_1 + 8.000000x_2 + 4.333333x_3 - 8.333333x_4 - 1.333333x_5 - 0.666667x_{12} - 2.666667x_{13} - 2.666667x_{14} - 2.666667x_{15} - 2
```

 x_2 enters and x_{15} leaves

```
14.222222222
                                                                                                                                         +1.1111111x_1 - 0.166667x_{15} + 1.222222x_3 - 1.722222x_4 - 1.388889x_5 + 0.055556x_{12} + 0.555556x_{17}
   x_8
                                0.44444444444
                                                                                                                                        +0.222222x_1+0.916667x_{15}+1.944444x_3+2.305556x_4+6.472222x_5+0.361111x_{12}-0.388889x_{17}
   x_9
 x_{10}
                                0.7777777778
                                                                                                                                        -0.1111111x_1 + 0.916667x_{15} - 0.722222x_3 - 2.027778x_4 + 5.138889x_5 + 0.694444x_{12} - 0.055556x_{17}
                                                                   13.0
                                                                                                                                         +1.000000x_1
                                                                                                                                                                                                                                                                                                         -3.000000x_3 - 2.0000000x_4 + 2.0000000x_5 + 1.0000000x_{12}
x_{11}
                                                                                                                                        +0.444444x_1 - 0.166667x_{15} - 0.111111x_3 + 0.6111111x_4 - 1.055556x_5 - 0.277778x_{12} + 0.222222x_{17}
                                 0.88888888889
  x_6
                                    10.1111111111
                                                                                                                                         x_{13}
                                    19.777777778
                                                                                                                                         -2.1111111x_1 - 1.333333x_{15} + 3.777778x_3 - 3.777778x_4 - 2.1111111x_5 - 0.555556x_{12} + 0.444444x_{17}
x_{14}
   x_2
                                 0.111111111111111
                                                                                                                                        +0.555556x_1 - 0.0833333x_{15} - 0.388889x_3 + 0.638889x_4 - 0.194444x_5 + 0.027778x_{12} + 0.277778x_{17} + 0.0277778x_{17} + 0.027778x_{17} + 0.0277778x_{17} + 0.027778x_{17} + 0.0277778x_{17} + 0.027778x_{17} + 0.0277778x_{17} + 0.027778x_{17} + 0.027778x_{17} + 0.027778x_{17} + 0.027778x_{17} + 0.027778x_{17} + 0.0277778x_{17} + 0.0277778x_{17} + 0.027778x_{17} + 0.027778x_{17} + 0.027778x_{17} + 0.0277778x_{17} + 0.027778x_{17} + 0.027778x_{17}
x_{16}
                                    8.33333333333
                                                                                                                                        +2.666667x_1 - 0.750000x_{15} - 1.166667x_3 + 0.416667x_4 - 1.083333x_5 + 0.583333x_{12} - 0.166667x_{17}
                                    1.3333333333
                                                                                                                                          -0.333333x_1 - 0.250000x_{15} + 0.833333x_3 - 1.083333x_4 - 0.583333x_5 + 0.083333x_{12} - 0.166667x_{17} + 0.0833333x_{12} - 0.083333x_{13} + 0.083333x_{12} - 0.083333x_{13} + 0.08333x_{13} + 0.0833x_{13} + 0.0833x_{13} + 0.0833x_{13} + 0.0833x_{13} + 0.083x_{13} + 0.083x_{
   x_7
                                    4.2222222222
                                                                                                                                         -0.888889x_1 - 0.666667x_{15} + 1.222222x_3 - 3.222222x_4 - 2.88889x_5 - 0.444444x_{12} - 0.444444x_{17} - 0.44444x_{17} - 0.4444x_{17} - 0.44444x_{17} - 0.4444x_{17} - 0.44444x_{17} - 0.4444x_{17} - 0.444x_{17} -
       z
```

 x_3 enters and x_2 leaves

```
14.5714285714
             +2.857143x_1 - 0.428571x_{15} - 3.142857x_2 + 0.285714x_4 - 2.000000x_5 + 0.142857x_{12} + 1.428571x_{17}
x_8
             +3.000000x_1 + 0.500000x_{15} - 5.000000x_2 + 5.500000x_4 + 5.500000x_5 + 0.500000x_{12} + 1.000000x_{17}
x_9
       1.0
   0.571428571429
             x_{10}
             -3.285714x_1 + 0.642857x_{15} + 7.714286x_2 - 6.928571x_4 + 3.500000x_5 + 0.785714x_{12} - 2.142857x_{17}
   12.1428571429
x_{11}
   0.857142857143
             x_6
x_{13}
   9.28571428571
             +0.428571x_1 - 0.214286x_{15} + 7.428571x_2 - 2.357143x_4 - 1.500000x_5 - 0.928571x_{12} - 1.285714x_{17}
   20.8571428571
             x_{14}
             x_3
   0.285714285714
       8.0
             x_{16}
   1.57142857143
             +0.857143x_1 - 0.428571x_{15} - 2.142857x_2 + 0.285714x_4 - 1.000000x_5 + 0.142857x_{12} + 0.428571x_{17}
x_7
             4.57142857143
```

 x_1 enters and x_{10} leaves

```
16.0
                              -2.500000x_{10} + 2.250000x_{15} + 1.500000x_2 - 7.750000x_4 + 11.750000x_5 + 1.750000x_{12}
x_8
               2.5
                              x_9
               0.5
                              x_1
              10.5
                              +2.875000x_{10} - 2.437500x_{15} + 2.375000x_2 + 2.312500x_4 - 12.312500x_5 - 1.062500x_{12} - 0.500000x_{17}
x_{11}
                              -0.250000x_{10} + 0.125000x_{15} + 0.750000x_2 - 0.375000x_4 + 0.375000x_5 - 0.125000x_{12}
               1.0
x_6
               9.5
                              x_{13}
              22.5
                              x_{14}
x_3
                              -1.250000x_{10} + 1.125000x_{15} - 0.250000x_2 - 2.375000x_4 + 6.375000x_5 + 0.875000x_{12}
                              -0.875000x_{10} + 0.437500x_{15} + 4.625000x_2 - 4.312500x_4 + 4.312500x_5 + 1.062500x_{12} - 1.500000x_{17} + 1.062500x_{18} + 1.062500x_{19} + 1.062500x_{1
               8.5
x_{16}
                              -0.750000x_{10} + 0.375000x_{15} - 0.750000x_2 - 2.125000x_4 + 3.125000x_5 + 0.625000x_{12}
               2.0
 x_7
                              -0.750000x_{10} -0.125000x_{15} -1.750000x_2 -3.625000x_4 +0.625000x_5 +0.125000x_{12}
               5.0
```

 x_5 enters and x_{11} leaves

```
+0.243655x_{10} - 0.076142x_{15} + 3.766497x_2 - 5.543147x_4 - 0.954315x_{11} + 0.736041x_{12} - 0.477157x_{17}
                                   26.0203045685
  x_8
                                 19.5025380711
                                                                                                                              x_9
  x_1
                                  4.60406091371
                                                                                                                               +0.248731x_{10} - 0.015228x_{15} + 2.553299x_2 - 1.908629x_4 - 0.390863x_{11} + 0.147208x_{12} - 0.695431x_{17}
                              0.852791878173
                                                                                                                              +0.233503x_{10} - 0.197970x_{15} + 0.192893x_2 + 0.187817x_4 - 0.081218x_{11} - 0.086294x_{12} - 0.040609x_{17} + 0.086294x_{12} - 0.086294x_{12} + 0.086284x_{12} + 0.086284x_{12} + 0.086284x_{12} + 0.086284x_{12} + 0.08644x_{12} + 0.08644x_{12} + 0.08644x_{12} + 0.08644x_{12} + 0.08644x_{12} + 0.0864x_{12} + 0.08644x_{12} + 
  x_5
                                                                                                                               x_6
                                 1.31979695431
                                                                                                                               -0.243655x_{10} + 0.076142x_{15} + 8.233503x_2 - 3.456853x_4 - 0.045685x_{11} - 0.736041x_{12} - 1.522843x_{17} - 0.045685x_{11} - 0.045685x_{12} - 0.045685x_{13} - 0.045685x_{14} - 0.045685x_{15} - 0.04566x_{15} - 0.045
                                 9.97969543147
x_{13}
                                  32.5736040609
                                                                                                                               x_{14}
                                 6.43654822335
  x_3
                                                                                                                              +0.238579x_{10} - 0.137056x_{15} + 0.979695x_2 - 1.177665x_4 - 0.517766x_{11} + 0.324873x_{12} - 0.258883x_{17}
x_{16}
                                  12.1776649746
                                                                                                                               +0.131980x_{10} - 0.416244x_{15} + 5.456853x_2 - 3.502538x_4 - 0.350254x_{11} + 0.690355x_{12} - 1.675127x_{17}
                                  4.66497461929
                                                                                                                                x_7
                                 5.53299492386
                                                                                                                               -0.604061x_{10} - 0.248731x_{15} - 1.629442x_2 - 3.507614x_4 - 0.050761x_{11} + 0.071066x_{12} - 0.025381x_{17} + 0.071066x_{12} - 0.025381x_{17} + 0.071066x_{17} + 0.07106x_{17} + 0.07106x_{17} + 0.07106x_{17} + 0.07106x_{17} + 0.07106x_{17}
      z
```

 x_{12} enters and x_6 leaves

```
32.1935483871
                                                 x_8
                                                x_9
             23.4193548387
            5.83870967742
                                                x_1
                                                +0.322581x_{10} - 0.225806x_{15} - 0.258065x_2 + 0.354839x_4 - 0.064516x_{11} + 0.548387x_6 - 0.032258x_{17}
x_5
           0.129032258065
            8.38709677419
                                                x_{12}
x_{13}
             3.8064516129
                                                +0.516129x_{10} - 0.161290x_{15} + 4.387097x_2 - 2.032258x_4 + 0.096774x_{11} + 4.677419x_6 - 1.451613x_{17}
             37.1290322581
                                                 -0.677419x_{10} - 1.225806x_{15} + 0.741935x_2 - 5.645161x_4 - 1.064516x_{11} - 3.451613x_6 + 0.967742x_{17} + 0.064516x_{11} - 0.064516x_{11} - 0.064516x_{11} - 0.064516x_{12} + 0.064516x_{13} + 0.064516x_{14} - 0.064516x_{15} + 0.064516x_{17} + 0.064616x_{17} + 0.064616x_{1
x_{14}
             9.16129032258
                                                 x_3
             17.9677419355
                                                x_{16}
             7.64516129032
                                                 x_7
                                                 -0.677419x_{10} - 0.225806x_{15} - 1.258065x_2 - 3.645161x_4 - 0.064516x_{11} - 0.451613x_6 - 0.032258x_{17}
            6.12903225806
```

 x_{-1} enters and Final Dictionary Solution: 6.12903225806 Num Pivots: 7