```
1.0
         -2.000000x_1 + 3.000000x_2
                                                 -1.000000x_5 + 1.000000x_6 + 1.000000x_7
x_8
         6.0
x_9
    9.0
         x_{10}
x_{11}
    9.0
         -2.000000x_1
                             -3.000000x_3 + 1.000000x_4 + 1.000000x_5 + 2.000000x_6 - 3.000000x_7
    2.0
         -2.000000x_1
                                                                     -3.000000x_7
                             +1.000000x_3
                                                 +3.000000x_5
x_{12}
    15.0
                   -1.000000x_2 -3.000000x_3
                                                 -2.000000x_5 + 2.000000x_6 + 1.000000x_7
x_{13}
         -1.000000x_1 -1.000000x_2
                                       -1.000000x_4 -3.000000x_5
    3.0
                                                                     -2.000000x_7
x_{14}
x_{15}
    4.0
         -3.000000x_1 + 3.000000x_2 + 3.000000x_3 + 3.000000x_4 - 1.000000x_5 - 1.000000x_6
    9.0
x_{16}
x_{1\underline{7}}
    11.0
         +1.000000x_1-1.000000x_2+3.000000x_3+2.000000x_4\\
                                                           -3.000000x_6 + 2.000000x_7
z
    0.0
         +2.000000x_1 +2.000000x_2 +1.000000x_3 +2.000000x_4
                                                           -2.000000x_6 + 1.000000x_7
```

No initialization required –; Proceed to Optimize.

```
x_8
    1.0
         -2.000000x_1 + 3.000000x_2
                                                -1.000000x_5 + 1.000000x_6 + 1.000000x_7
    6.0
         x_9
    9.0
         x_{10}
        -2.000000x_1
    9.0
                             -3.000000x_3 + 1.000000x_4 + 1.0000000x_5 + 2.0000000x_6 - 3.0000000x_7
x_{11}
x_{12}
    2.0
         -2.000000x_1
                            +1.000000x_3
                                                +3.000000x_5
                   -1.000000x_2 -3.000000x_3
                                                -2.000000x_5 + 2.000000x_6 + 1.000000x_7
    15.0
x_{13}
x_{14}
    3.0
         -1.000000x_1 - 1.000000x_2
                                      -1.000000x_4 -3.000000x_5
    4.0
         x_{15}
    9.0
         -3.000000x_1 + 3.000000x_2 + 3.000000x_3 + 3.000000x_4 - 1.000000x_5 - 1.000000x_6
x_{16}
    11.0
        +1.000000x_1 -1.000000x_2 +3.000000x_3 +2.000000x_4
                                                          -3.000000x_6 + 2.000000x_7
x_{17}
    0.0
         +2.000000x_1 +2.000000x_2 +1.000000x_3 +2.000000x_4
                                                          -2.000000x_6 + 1.000000x_7
z
```

 x_1 enters and x_8 leaves

```
0.5
       -0.500000x_8 + 1.500000x_2
                                      -0.500000x_5 + 0.500000x_6 + 0.500000x_7
x_1
   7.5
       x_9
   7.5
       x_{10}
   8.0
       x_{11}
   1.0
       +1.000000x_8 -3.000000x_2 +1.000000x_3
                                      +4.000000x_5 -1.000000x_6 -4.000000x_7
x_{12}
   15.0
               -1.000000x_2 -3.000000x_3
                                      -2.000000x_5 + 2.000000x_6 + 1.000000x_7
x_{13}
       +0.500000x_8 -2.500000x_2
   2.5
                              -1.000000x_4 - 2.500000x_5 - 0.500000x_6 - 2.500000x_7
x_{14}
   3.5
       x_{15}
   7.5
       +1.500000x_8 - 1.500000x_2 + 3.000000x_3 + 3.000000x_4 + 0.500000x_5 - 2.500000x_6 - 1.500000x_7
x_{16}
       -0.500000x_8 + 0.500000x_2 + 3.000000x_3 + 2.0000000x_4 - 0.5000000x_5 - 2.500000x_6 + 2.500000x_7
x_{17}
       1.0
```

 x_2 enters and x_{12} leaves

```
1.0
                      -0.500000x_{12} + 0.500000x_3
                                              +1.500000x_5
                                                              -1.500000x_7
x_1
              8.33333333333
x_9
              5.0
x_{10}
x_{11}
       7.0
                      +1.000000x_{12} -4.000000x_3 +1.000000x_4 -2.000000x_5 +2.000000x_6
   0.3333333333333
              +0.333333x_8 -0.333333x_{12} +0.333333x_3
                                              +1.333333x_5 -0.333333x_6 -1.333333x_7
x_2
   14.666666667
              -0.333333x_8 + 0.3333333x_{12} - 3.333333x_3
                                              -3.333333x_5 + 2.333333x_6 + 2.333333x_7
x_{13}
              1.6666666667
x_{14}
x_{15}
       2.0
              -1.000000x_8 + 1.500000x_{12} + 0.500000x_3 + 1.000000x_4 - 3.500000x_5
              +1.000000x_8 + 0.500000x_{12} + 2.500000x_3 + 3.000000x_4 - 1.500000x_5 - 2.000000x_6 + 0.500000x_7
       7.0
x_{16}
   11.6666666667
              x_{17}
              2.66666666667
```

 x_3 enters and x_{10} leaves

```
1.71428571429
                                                                                                                                                                 -0.142857x_8 - 0.142857x_{12} - 0.142857x_{10} - 0.142857x_4 + 0.142857x_5 + 0.285714x_6 - 0.714286x_7
   x_1
                                              12.380952381
                                                                                                                                                                  -1.476190x_8 + 1.190476x_{12} - 0.809524x_{10} + 1.190476x_4 - 6.857143x_5 + 1.285714x_6 + 5.619048x_7 + 1.285714x_6 + 5.61904x_6 + 1.285714x_6 + 1.285714
   x_9
   x_3
                                            1.42857142857
                                                                                                                                                                  1.28571428571
                                                                                                                                                                 +1.142857x_8 - 1.857143x_{12} + 1.142857x_{10} + 2.142857x_4 + 8.857143x_5 - 0.285714x_6 - 6.285714x_7 + 1.142857x_8 - 1.857143x_{12} + 1.142857x_{10} + 2.142857x_4 + 8.857143x_5 - 0.285714x_6 - 6.285714x_7 + 1.142857x_8 - 1.857143x_8 - 1.857144x_8 - 1.857144x_8 - 1.85714x_8 - 1.8
 x_{11}
                                                                                                                                                                 0.809523809524
  x_2
                                          9.90476190476
                                                                                                                                                                  x_{13}
                                          0.47619047619
                                                                                                                                                                  x_{14}
 x_{15}
                                            2.71428571429
                                                                                                                                                                  -1.142857x_8 + 1.857143x_{12} - 0.142857x_{10} + 0.857143x_4 - 4.857143x_5 + 0.285714x_6 + 7.285714x_7 + 0.285714x_8 + 0.28571
x_{16}
                                          10.5714285714
                                                                                                                                                                 +0.285714x_8 + 2.285714x_{12} - 0.714286x_{10} + 2.285714x_4 - 8.285714x_5 - 0.571429x_6 + 4.428571x_7 + 4.4285714x_8 + 2.285714x_8 + 2.2857
                                            16.1904761905
                                                                                                                                                                    x_{17}
                                          6.47619047619
                                                                                                                                                                  z
```

 x_4 enters and x_{14} leaves

```
1.625
                                                                                                         -0.125000x_8 - 0.187500x_{12} - 0.187500x_{10} + 0.187500x_{14} + 0.812500x_5 + 0.312500x_6 - 0.625000x_7 + 0.0000x_7 + 0.00
  x_1
                                           13.125
                                                                                                         -1.625000x_8 + 1.562500x_{12} - 0.437500x_{10} - 1.562500x_{14} - 12.437500x_5 + 1.062500x_6 + 4.875000x_7 + 1.062500x_7 + 1.062500x_8 + 1.0
  x_9
                                                                                                         1.25
  x_3
                                             2.625
                                                                                                         x_{11}
                                                0.75
                                                                                                         x_2
x_{13}
                                                 10.5
                                                                                                         +0.500000x_8 - 1.750000x_{12} + 1.250000x_{10} - 1.250000x_{14} + 1.250000x_5 + 0.250000x_6 - 3.500000x_7
                                            0.625
                                                                                                         x_4
                                                 3.25
                                                                                                         -1.250000x_8 + 2.125000x_{12} + 0.125000x_{10} - 1.125000x_{14} - 8.875000x_5 + 0.125000x_6 + 6.750000x_7 + 0.0000x_7 + 0.00
x_{15}
                                                 12.0
                                                                                                         x_{16}
x_{17}
                                           16.875
                                                                                                         -1.375000x_8 + 2.437500x_{12} - 0.562500x_{10} - 1.437500x_{14} - 13.562500x_5 - 1.062500x_6 + 6.125000x_7 - 1.062500x_7 - 1.062500x_8 + 1.0
                                                 7.25
```

 x_{12} enters and x_{11} leaves

```
1.21052631579
                                                     x_1
              16.5789473684
                                                     -0.473684x_8 - 1.315789x_{11} + 1.947368x_{10} - 5.263158x_{14} - 14.000000x_5 + 0.157895x_6 - 5.157895x_7 + 0.157895x_7 + 0.1
 x_9
              2.63157894737
                                                     +0.210526x_8 - 0.526316x_{11} + 0.578947x_{10} - 1.105263x_{14} - 2.000000x_5 + 0.263158x_6 - 2.263158x_7
 x_3
              2.21052631579
                                                     +0.736842x_8 - 0.842105x_{11} + 1.526316x_{10} - 2.368421x_{14} - 1.000000x_5 - 0.578947x_6 - 6.421053x_7
x_{12}
                                                     +0.157895x_8+0.105263x_{11}-0.315789x_{10}+0.421053x_{14}+1.000000x_5-0.052632x_6+0.052632x_7
            0.473684210526
 x_2
              6.63157894737
                                                     -0.789474x_8 + 1.473684x_{11} - 1.421053x_{10} + 2.894737x_{14} + 3.000000x_5 + 1.263158x_6 + 7.736842x_7
x_{13}
                                                     1.31578947368
 x_4
x_{15}
              7.94736842105
                                                     18.6315789474
x_{16}
              22.2631578947
                                                     +0.421053x_8 - 2.052632x_{11} + 3.157895x_{10} - 7.210526x_{14} - 16.000000x_5 - 2.473684x_6 - 9.526316x_7
x_{17}
              8.63157894737
                                                     +0.210526x_8 - 0.526316x_{11} + 0.578947x_{10} - 3.105263x_{14} - 8.000000x_5 - 1.736842x_6 - 5.263158x_7
```

 x_8 enters and x_1 leaves

```
4.6
     -3.800000x_1 + 0.600000x_{11} - 1.800000x_{10} + 2.400000x_{14} + 3.800000x_5 + 1.600000x_6 + 2.200000x_7
x_8
     x_9
  14.4
x_3
  3.6
     5.6
     x_{12}
     -0.600000x_1 + 0.200000x_{11} - 0.600000x_{10} + 0.800000x_{14} + 1.600000x_5 + 0.200000x_6 + 0.400000x_7
  1.2
x_2
  3.0
     +3.000000x_1 + 1.000000x_{11} + 0.000000x_{10} + 1.000000x_{14} + 0.000000x_5 + 0.000000x_6 + 6.000000x_7
x_{13}
x_4
  1.8
     x_{15}
  9.4
     -1.200000x_1 - 1.600000x_{11} + 2.800000x_{10} - 5.400000x_{14} - 9.800000x_5 - 0.600000x_6 - 6.200000x_7
x_{16}
  28.8
     24.2
     x_{17}
  9.6
     z
```

 x_{10} enters and x_2 leaves

```
1.0
     -2.000000x_1
                +3.000000x_2 +0.000000x_{14} -1.000000x_5 +1.000000x_6 +1.000000x_7
x_8
  20.0
     x_9
  4.0
     x_3
     6.0
x_{12}
  2.0
     x_{10}
x_{13}
  3.0
     +3.000000x_1 + 1.000000x_{11} - 0.000000x_2 + 1.000000x_{14} + 0.000000x_5 + 0.000000x_6 + 6.000000x_7
                                        -2.000000x_7
  3.0
     -1.000000x_1
                -1.000000x_2 -1.000000x_{14} -3.000000x_5
x_4
x_{15}
  15.0
     30.0
     x_{16}
x_{17}
  29.0
     -4.000000x_1 - 1.000000x_{11} - 4.000000x_2 - 3.000000x_{14} - 8.000000x_5 - 1.000000x_6 - 7.000000x_7
     10.0
```

 x_{-1} enters and Final Dictionary Solution: 10.0 Num Pivots: 7