```
15.0
                 -2.000000x_2 -3.000000x_3 +3.000000x_4 -2.000000x_5 -2.000000x_6 -3.000000x_7
x_8
   13.0
                 +2.000000x_2
                                  -2.000000x_4 + 3.000000x_5 + 1.000000x_6 + 3.000000x_7
x_9
    1.0
                 x_{10}
x_{11}
    6.0
        -3.000000x_1 - 2.000000x_2 - 3.000000x_3 + 3.000000x_4 - 2.000000x_5 - 1.000000x_6 - 2.000000x_7
        12.0
x_{12}
   14.0
        -2.000000x_1 -2.000000x_2 -3.000000x_3 -3.000000x_4
                                                    +1.000000x_6 +1.000000x_7
x_{13}
        5.0
x_{14}
x_{15}
   11.0
        +2.000000x_1 -2.000000x_2
                                  +3.000000x_4 +1.000000x_5
        11.0
x_{16}
x_{1\underline{7}}
    7.0
                 +1.000000x_2 +1.000000x_3
                                           -1.000000x_5 +3.000000x_6 +3.000000x_7
    0.0
                 +2.000000x_2 -2.000000x_3
                                                             -2.000000x_7
z
                                           -1.000000x_5
```

No initialization required –; Proceed to Optimize.

```
x_8
   15.0
              -2.000000x_2 -3.000000x_3 +3.000000x_4 -2.000000x_5 -2.000000x_6 -3.000000x_7
   13.0
              +2.000000x_2
                            -2.000000x_4 + 3.000000x_5 + 1.000000x_6 + 3.000000x_7
x_9
   1.0
              x_{10}
   6.0
      x_{11}
x_{12}
   12.0
      -2.000000x_1 - 2.000000x_2 - 3.000000x_3 - 3.000000x_4
   14.0
                                           +1.000000x_6 +1.000000x_7
x_{13}
x_{14}
   5.0
      11.0
      +2.000000x_1 -2.000000x_2
                            +3.000000x_4 +1.000000x_5
x_{15}
   11.0
      x_{16}
                                    -1.000000x_5 +3.000000x_6 +3.000000x_7
   7.0
              +1.000000x_2 +1.000000x_3
x_{17}
              +2.000000x_2 -2.000000x_3
   0.0
                                    -1.000000x_5
                                                   -2.000000x_7
z
```

 x_2 enters and x_{14} leaves

```
11.666666667
                                                                                                                                                                                                 -0.666667x_1 + 0.666667x_{14} - 3.666667x_3 + 1.666667x_4 - 2.666667x_5 - 3.333333x_6 - 1.666667x_7 - 3.666667x_7 - 3.666667x_
  x_8
                                                16.3333333333
                                                                                                                                                                                               +0.666667x_1 - 0.666667x_{14} + 0.666667x_3 - 0.666667x_4 + 3.666667x_5 + 2.333333x_6 + 1.666667x_7 + 2.33333x_6 + 2.33333x_6 + 2.33333x_6 + 2.33333x_6 + 2.33333x_6 + 2.3333x_6 + 2.333x_6 + 2.33x_6 +
  x_9
                                                                                                                                                                                               2.66666666667
 x_{10}
x_{11}
                                                2.66666666667
                                                                                                                                                                                                 -3.666667x_1 + 0.666667x_{14} - 3.666667x_3 + 1.666667x_4 - 2.666667x_5 - 2.333333x_6 - 0.666667x_7 + 0.666667x_7 - 0.666667x_7 + 0.666667x_7 - 0.666667x_7 + 0.66667x_7 + 0.666667x_7 + 0.666667x_7
                                                15.3333333333
                                                                                                                                                                                               -2.333333x_1 - 0.666667x_{14} + 3.666667x_3 + 4.333333x_4 + 2.666667x_5 + 2.333333x_6 - 0.333333x_7 + 2.666667x_5 + 2.333333x_7 + 2.666667x_5 + 2.333333x_7 + 2.666667x_5 + 2.333333x_7 + 2.666667x_5 + 2.333333x_7 + 2.666667x_5 + 2.66667x_5 + 2.66667x_5 + 2.666667x_5 
 x_{12}
                                               10.666666667
                                                                                                                                                                                                 x_{13}
                                               1.66666666667
                                                                                                                                                                                               7.6666666667
                                                                                                                                                                                               x_{15}
                                                                                                                                                                                               x_{16}
                                               7.66666666667
                                                8.6666666667
                                                                                                                                                                                               +0.333333x_1 - 0.333333x_{14} + 1.3333333x_3 + 0.666667x_4 - 0.666667x_5 + 3.666667x_6 + 2.333333x_7 + 0.666667x_5 + 0.6666667x_5 + 0.6666667x_5 + 0.6666667x_5 + 0.6666
 x_{17}
                                                                                                                                                                                              3.33333333333
```

 x_1 enters and x_{11} leaves

```
11.1818181818
x_8
              16.8181818182
                                                      -0.181818x_{11} -0.545455x_{14}
                                                                                                                                                    -0.363636x_4 + 3.181818x_5 + 1.909091x_6 + 1.545455x_7
x_9
              2.90909090909
                                                     x_{10}
            0.727272727273
                                                     -0.272727x_{11} + 0.181818x_{14} - 1.000000x_3 + 0.454545x_4 - 0.727273x_5 - 0.636364x_6 - 0.181818x_7
x_1
                                                     13.6363636364
x_{12}
              8.72727272727
                                                      +0.727273x_{11} + 0.181818x_{14} - 1.000000x_3 - 5.545455x_4 + 1.272727x_5 + 1.363636x_6 + 2.818182x_7 + 1.272727x_5 + 1.272727x_5 + 1.272727x_5 + 1.272727x_5 + 1.272727x_5 + 1.27277x_5 + 1.27277x_5
x_{13}
                                                                                                                                                    +0.818182x_4+0.090909x_5+0.454545x_6-0.727273x_7
              1.90909090909
                                                     -0.090909x_{11} -0.272727x_{14}
x_2
                                                     x_{15}
              8.63636363636
                                                                                                                                                    -4.545455x_4 + 2.272727x_5 - 1.636364x_6 - 1.181818x_7
              5.72727272727
                                                      +0.727273x_{11} +0.181818x_{14}
x_{16}
              8.90909090909
                                                      x_{17}
              3.81818181818
                                                     -0.181818x_{11} - 0.545455x_{14} - 2.000000x_3 + 1.636364x_4 - 0.818182x_5 + 0.909091x_6 - 3.454545x_7
```

 x_4 enters and x_{16} leaves

```
12.9
        +0.400000x_{11} +0.600000x_{14} -3.000000x_3 -0.300000x_{16} -1.500000x_5 -3.400000x_6 -1.900000x_7
x_8
   16.36
        -0.240000x_{11} -0.560000x_{14}
                                  +0.080000x_{16} +3.0000000x_5 +2.040000x_6 +1.640000x_7
x_9
x_{10}
    5.2
        1.3
        x_1
   17.76
        +1.160000x_{11} - 0.960000x_{14} + 6.000000x_3 - 0.720000x_{16} + 6.000000x_5 + 2.640000x_6 - 0.760000x_7
x_{12}
    1.74
        x_{13}
x_2
    2.94
        +0.040000x_{11} -0.240000x_{14}
                                  -0.180000x_{16} + 0.500000x_5 + 0.160000x_6 - 0.940000x_7
x_{15}
    11.5
        +0.000000x_{11} + 1.000000x_{14} - 2.000000x_3 - 0.500000x_{16} + 0.500000x_5 - 3.000000x_6 + 0.500000x_7
x_4
   1.26
        +0.160000x_{11} +0.040000x_{14}
                                  -0.220000x_{16} + 0.500000x_5 - 0.360000x_6 - 0.260000x_7
   9.94
        x_{17}
   5.88
        z
```

 x_5 enters and x_{13} leaves

```
11.16
x_8
  19.84
      x_9
  7.52
      x_{10}
  0.72
      -0.146667x_{11} + 0.213333x_{14} - 0.666667x_3 - 0.506667x_{16} + 0.333333x_{13} - 1.920000x_6 - 1.720000x_7
x_1
  24.72
      x_{12}
x_5
      -0.106667x_{11} - 0.026667x_{14} - 0.666667x_3 + 0.813333x_{16} - 0.666667x_{13} + 2.240000x_6 + 2.840000x_7
  1.16
  3.52
      x_2
x_{15}
  12.08
      1.84
      x_4
x_{17}
  9.36
      +0.093333x_{11} - 0.226667x_{14} + 1.333333x_3 - 0.586667x_{16} + 0.333333x_{13} + 2.040000x_6 + 0.640000x_7
      +0.080000x_{11} - 0.480000x_{14} - 2.000000x_3 - 0.360000x_{16} - 0.000000x_{13} + 0.320000x_6 - 3.880000x_7
  5.88
```

 x_6 enters and x_1 leaves

```
8.625
                               +1.076389x_{11} - 0.1111111x_{14} + 0.347222x_3 + 0.263889x_{16} - 0.173611x_{13} + 3.520833x_1 - 0.104167x_7
x_8
            23.125
                               x_9
                               9.5
x_{10}
x_6
             0.375
                               -0.076389x_{11} + 0.1111111x_{14} - 0.347222x_3 - 0.263889x_{16} + 0.173611x_{13} - 0.520833x_1 - 0.895833x_7
                               30.75
x_{12}
                2.0
                               x_5
                               -0.1111111x_{11} - 0.1111111x_{14} - 0.777778x_3 - 0.1111111x_{16} - 0.1111111x_{13} - 0.666667x_1 - 0.66667x_1 - 0.66667x_1 - 0.66667x_1 - 0.666667x_1 - 0.666667x_1 - 
                4.0
 x_2
            11.375
                               x_{15}
             2.125
                               +0.048611x_{11} + 0.1111111x_{14} - 0.597222x_3 - 0.013889x_{16} - 0.201389x_{13} - 0.395833x_1 + 0.479167x_7
 x_4
            10.125
                               x_{17}
                               6.0
```

 x_{11} enters and x_6 leaves

```
13.9090909091
                                                                                                                                                                     -14.090909x_6 + 1.454545x_{14} - 4.545455x_3 - 3.454545x_{16} + 2.272727x_{13} - 3.818182x_1 - 12.727273x_7
   x_8
                                           17.0909090909
                                                                                                                                                                     +16.090909x_6 - 1.454545x_{14} + 0.545455x_3 + 4.454545x_{16} - 3.272727x_{13} + 3.818182x_1 + 16.727273x_{73} + 3.818182x_{13} + 16.727273x_{73} + 3.818182x_{13} + 16.727273x_{73} + 3.818182x_{14} + 3.81818x_{14} + 3.81818x_{14} + 3.81818x_{15} 
   x_9
 x_{10}
                                           7.45454545455
                                                                                                                                                                         +5.4545454x_6 -0.272727x_{14} -4.272727x_3 +1.272727x_{16} -1.363636x_{13} +0.090909x_1 +1.636364x_7
                                           4.90909090909
                                                                                                                                                                      -13.090909x_6 + 1.4545454x_{14} - 4.545455x_3 - 3.454545x_{16} + 2.272727x_{13} - 6.818182x_1 - 11.727273x_{72} + 2.272727x_{73} + 2.27277x_{73} + 2.2727x_{73} + 2.2727x
x_{11}
                                                                                                                                                                         +9.272727x_6 -0.363636x_{14} -0.363636x_3 +2.363636x_{16} -2.818182x_{13} -3.545455x_1 +10.181818x_7 +10.181818x
                                           27.2727272727
x_{12}
                                                                                                                                                                         0.636363636364
  x_5
                                           3.45454545455
                                                                                                                                                                         x_2
 x_{15}
                                            11.8181818182
                                                                                                                                                                          -1.181818x_6 + 0.909091x_{14} - 2.090909x_3 + 0.090909x_{16} - 0.454545x_{13} + 0.363636x_1 + 2.545455x_7
  x_4
                                            2.36363636364
                                                                                                                                                                         -0.636364x_6 + 0.181818x_{14} - 0.818182x_3 - 0.181818x_{16} - 0.090909x_{13} - 0.727273x_1 - 0.090909x_7
                                           9.81818181818
                                                                                                                                                                         x_{17}
                                           6.27272727273
                                                                                                                                                                          -0.727273x_6 -0.363636x_{14} -2.3636363x_3 -0.636364x_{16} +0.181818x_{13} -0.545455x_1 -4.818182x_{7} +0.181818x_{13} -0.545455x_1 -0.181818x_{13} +0.181818x_{13} +0.1818x_{13} +0.1818x_{14} +0.1818x_{14} +0.1818x_{14} +0.1818x_{15} +0.1818x_{15} +0.181
```

 x_{13} enters and x_5 leaves

```
15.5
    x_8
  14.8
    x_9
x_{10}
  6.5
    6.5
    x_{11}
  25.3
    x_{12}
x_{13}
  0.7
    +4.000000x_6 - 0.200000x_{14} - 0.200000x_3 + 1.300000x_{16} - 1.100000x_5 + 0.800000x_1 + 4.500000x_7
  3.2
    x_2
x_{15}
  11.5
    2.3
    x_4
x_{17}
  10.2
    +3.000000x_6 - 0.200000x_{14} + 0.800000x_3 - 0.200000x_{16} - 0.600000x_5 - 0.200000x_1 + 2.000000x_7
         -0.400000x_{14} - 2.400000x_3 - 0.400000x_{16} - 0.200000x_5 - 0.400000x_1 - 4.000000x_7
  6.4
```

 x_{-1} enters and Final Dictionary Solution: 6.4 Num Pivots: 7