```
+1.000000x_1 - 2.000000x_2 + 2.000000x_3 - 1.000000x_4 - 2.000000x_5 + 3.000000x_6 + 3.000000x_7 + 1.000000x_8
x_9
    12.0
         +1.000000x_1 -2.000000x_2 -3.000000x_3 +1.000000x_4
                                                              -3.000000x_6 - 2.000000x_7 + 2.000000x_8
x_{10}
    4.0
                              +2.000000x_3 +1.000000x_4 -3.000000x_5 -2.000000x_6 +3.000000x_7 +2.000000x_8
         -2.000000x_1
x_{11}
    10.0
         +3.000000x_1 + 3.000000x_2 + 2.000000x_3 - 1.000000x_4 + 2.000000x_5 - 2.000000x_6 + 1.000000x_7 - 1.000000x_8
x_{12}
                                                              -2.000000x_6 -3.000000x_7 +2.000000x_8
    15.0
         -1.000000x_1 + 3.000000x_2 + 1.000000x_3 + 3.000000x_4
    4.0
         -1.000000x_1
                               -1.000000x_3 -3.000000x_4 +3.000000x_5
                                                                         +3.000000x_7 -2.000000x_8
x_{14}
    2.0
         x_{15}
x_{16}
    6.0
                    -2.000000x_2 -2.000000x_3
                                                    -3.000000x_5 -1.000000x_6 -2.000000x_7
         15.0
x_{17}
x_{18}
    14.0
                              +2.000000x_3 +2.000000x_4 +3.000000x_5 -2.000000x_6 -1.000000x_7
         -2.000000x_1
                                         -2.000000x_4
                                                              -2.000000x_6
x_{19}
    2.0
         +1.000000x_1 +3.000000x_2
                                                                                    -3.000000x_8
         12.0
                                                                                    +3.000000x_8
x_{20}
                              14.0
         -1.000000x_1
x_{21}
x_{22}
    11.0
                    -1.000000x_2 +3.000000x_3
                                                    -1.000000x_5 - 2.000000x_6 - 2.000000x_7
    13.0
         +1.000000x_1 -3.000000x_2 +3.000000x_3 -3.000000x_4 +3.000000x_5 +3.000000x_6
                                                                                    -2.000000x_8
x_{23}
    0.0
         -2.000000x_1 + 1.000000x_2 - 1.000000x_3 - 1.000000x_4
                                                              -1.000000x_6 + 2.000000x_7 + 2.0000000x_8
```

No initialization required –; Proceed to Optimize.

```
+1.000000x_1 - 2.000000x_2 + 2.000000x_3 - 1.000000x_4 - 2.000000x_5 + 3.000000x_6 + 3.000000x_7 + 1.000000x_8
x_9
x_{10}
    12.0
          +1.000000x_1 -2.000000x_2 -3.000000x_3 +1.000000x_4
                                                                 -3.000000x_6 - 2.000000x_7 + 2.000000x_8
     4.0
          -2.000000x_1
                                +2.000000x_3 +1.000000x_4 -3.000000x_5 -2.000000x_6 +3.000000x_7 +2.000000x_8
x_{11}
         10.0
x_{12}
                                                                 -2.000000x_6 -3.000000x_7 +2.0000000x_8
    15.0
          -1.000000x_1 + 3.000000x_2 + 1.000000x_3 + 3.000000x_4
x_{13}
     4.0
          -1.000000x_1
                                -1.000000x_3 -3.000000x_4 +3.000000x_5
                                                                            +3.000000x_7 -2.000000x_8
x_{14}
     2.0
          x_{15}
x_{16}
     6.0
                     -2.000000x_2 -2.000000x_3
                                                      -3.000000x_5 -1.000000x_6 -2.000000x_7
          15.0
x_{17}
    14.0
          -2.000000x_1
                                +2.000000x_3 +2.000000x_4 +3.000000x_5 -2.000000x_6 -1.000000x_7
x_{18}
     2.0
          +1.000000x_1 +3.000000x_2
                                           -2.000000x_4
                                                                 -2.000000x_6
                                                                                       -3.000000x_8
x_{19}
          +1.000000x_1 -3.000000x_2 -3.000000x_3 +3.000000x_4 +2.000000x_5 -2.000000x_6
                                                                                       +3.000000x_8
    12.0
x_{20}
    14.0
          -1.000000x_1
                                +2.000000x_3 -1.000000x_4 +2.0000000x_5 +3.000000x_6 +2.0000000x_7 -3.000000x_8
x_{21}
                     -1.000000x_2 +3.000000x_3
                                                      -1.000000x_5 -2.000000x_6 -2.000000x_7
    11.0
x_{22}
    13.0
          +1.000000x_1 -3.000000x_2 +3.000000x_3 -3.000000x_4 +3.000000x_5 +3.000000x_6
                                                                                       -2.000000x_8
x_{23}
          -2.000000x_1 + 1.000000x_2 - 1.000000x_3 - 1.000000x_4
                                                                 -1.000000x_6 + 2.000000x_7 + 2.000000x_8
     0.0
```

 x_2 enters and x_{16} leaves

```
x_9
       +1.000000x_1 + 1.000000x_{16} + 4.000000x_3 - 1.000000x_4 + 1.000000x_5 + 4.000000x_6 + 5.000000x_7 + 1.000000x_8
   6.0
       +1.000000x_1 +1.000000x_{16} -1.000000x_3 +1.000000x_4 +3.000000x_5 -2.000000x_6
                                                                +2.000000x_8
x_{10}
   4.0
       -2.000000x_1
                        +2.000000x_3 + 1.000000x_4 - 3.000000x_5 - 2.000000x_6 + 3.000000x_7 + 2.000000x_8
x_{11}
   19.0
       +3.000000x_1 - 1.500000x_{16} - 1.000000x_3 - 1.000000x_4 - 2.500000x_5 - 3.500000x_6 - 2.000000x_7 - 1.000000x_8
x_{12}
       24.0
x_{13}
       -1.000000x_1
                        -1.000000x_3 -3.000000x_4 +3.000000x_5
                                                        +3.000000x_7 - 2.000000x_8
   4.0
x_{14}
       5.0
x_{15}
x_2
   3.0
               -0.500000x_{16} -1.000000x_3
                                        -1.500000x_5 - 0.500000x_6 - 1.000000x_7
       21.0
x_{17}
x_{18}
                        +2.000000x_3 +2.000000x_4 +3.0000000x_5 -2.000000x_6 -1.000000x_7
   14.0
       -2.000000x_1
       x_{19}
   11.0
       +1.000000x_1 +1.500000x_{16}
   3.0
                                +3.000000x_4 +6.500000x_5 -0.500000x_6 +3.000000x_7 +3.000000x_8
x_{20}
   14.0
       -1.000000x_1
                        x_{21}
   8.0
               +0.500000x_{16} +4.000000x_3
                                        +0.500000x_5 -1.500000x_6 -1.000000x_7
x_{22}
   4.0
       x_{23}
       3.0
```

 x_7 enters and x_2 leaves

```
x_9
   6.0
      +1.000000x_1 +1.000000x_{16} -1.000000x_3 +1.000000x_4 +3.000000x_5 -2.000000x_6
                                                       +2.000000x_8
x_{10}
x_{11}
   13.0
      x_{12}
   13.0
      +3.000000x_1 - 0.500000x_{16} + 1.000000x_3 - 1.000000x_4 + 0.500000x_5 - 2.500000x_6 + 2.000000x_2 - 1.000000x_8
   6.0
      13.0
      x_{14}
   8.0
      x_{15}
   3.0
             -0.500000x_{16} -1.000000x_3
                                  -1.500000x_5 -0.500000x_6 -1.000000x_2
x_7
      x_{17}
   18.0
   11.0
      x_{18}
      +1.000000x_1
                            -2.000000x_4
                                         -2.000000x_6 + 3.000000x_2 - 3.000000x_8
   2.0
x_{19}
   12.0
      +1.000000x_1
                     -3.000000x_3 + 3.000000x_4 + 2.000000x_5 - 2.000000x_6 - 3.000000x_2 + 3.000000x_8
x_{20}
   20.0
                           -1.000000x_4 - 1.000000x_5 + 2.000000x_6 - 2.000000x_2 - 3.000000x_8
x_{21}
      -1.000000x_1 - 1.000000x_{16}
x_{22}
   5.0
             +1.000000x_{16} +5.000000x_3
                                  +2.000000x_5 -1.000000x_6 +1.000000x_2
   13.0
                    +3.000000x_3 -3.000000x_4 +3.000000x_5 +3.000000x_6 -3.000000x_2 -2.000000x_8
x_{23}
      +1.0000000x_1
   6.0
```

 x_8 enters and x_{19} leaves

```
23.6666666667
               x_9
    7.33333333333
               +1.666667x_1 + 1.000000x_{16} - 1.000000x_3 - 0.333333x_4 + 3.000000x_5 - 3.333333x_6 + 2.000000x_2 - 0.66
x_{10}
               -1.333333x_1 - 1.500000x_{16} - 1.000000x_3 - 0.333333x_4 - 7.500000x_5 - 4.833333x_6 - 1.000000x_2 - 0.66
    14.3333333333
x_{11}
    12.3333333333
               x_{12}
               7.33333333333
x_{13}
    11.666666667
               x_{14}
               9.333333333333
x_{15}
        3.0
                        -0.500000x_{16} -1.000000x_3
                                                    -1.500000x_5 - 0.500000x_6 - 1.000000x_2
x_7
               -3.666667x_1 - 0.500000x_{16} - 2.000000x_3 + 0.333333x_4 - 0.500000x_5 + 2.833333x_6 - 1.000000x_2 + 0.66
x_{17}
    16.666666667
               -2.000000x_1 + 0.500000x_{16} + 3.000000x_3 + 2.000000x_4 + 4.500000x_5 - 1.500000x_6 + 1.000000x_2
       11.0
x_{18}
   0.66666666667
                                           -0.666667x_4
                                                            -0.666667x_6 + 1.000000x_2 - 0.33
               +0.333333x_1
x_8
                                  -3.000000x_3 + 1.000000x_4 + 2.000000x_5 - 4.000000x_6
       14.0
               +2.000000x_1
x_{20}
       18.0
               -2.000000x_1 - 1.000000x_{16}
                                           x_{21}
       5.0
                        +1.000000x_{16} +5.000000x_3
                                                   +2.000000x_5 -1.000000x_6 +1.000000x_2
x_{22}
    11.6666666667
               +0.333333x_1
                                  x_{23}
               -1.333333x_1 - 1.000000x_{16} - 3.000000x_3 - 2.333333x_4 - 3.000000x_5 - 3.333333x_6 + 1.000000x_2 - 0.66
    7.33333333333
```

 x_2 enters and x_{14} leaves

```
14.3333333333
        x_9
x_{10}
    12.0
        x_{11}
    12.0
        x_{12}
  14.666666667
        26.0
x_{13}
  2.33333333333
        x_2
  11.6666666667
        -1.666667x_1 - 1.300000x_{16} - 4.800000x_3 - 4.666667x_4 - 4.300000x_5 - 5.366667x_6 - 0.200000x_{14} -
x_{15}
x_7
  0.666666666667
        14.3333333333
x_{17}
  13.3333333333
        x_{18}
    3.0
             x_8
    14.0
        +2.000000x_1
                 -3.000000x_3 + 1.000000x_4 + 2.000000x_5 - 4.000000x_6
x_{20}
  6.33333333333
        x_{21}
  7.33333333333
        x_{22}
 1.7763568394e - 15
        +2.000000x_1 + 1.500000x_{16} + 7.000000x_3 + 0.000000x_4 + 4.500000x_5 + 4.500000x_6 + 1.000000x_{14}
x_{23}
  9.66666666667
        z
```

 x_{-1} enters and Final Dictionary Solution: 9.6666666667 Num Pivots: 4