```
>> clear
>> learn_from_data
    [1x16 double]    [1x16 double]

Epoch... 1
Epoch... 2

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.1e+00|1.0e+06| 1.891756e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.982|0.984|1.8e-02|1.5e-01|4.7e+04| 1.916328e+04 -1.377457e+01| 0:0:00| chol  1  1
 2|1.000|1.000|4.7e-07|2.0e-02|9.6e+03| 7.625184e+03 -3.944553e+01| 0:0:00| chol  1  1
 3|1.000|1.000|9.8e-08|5.9e-03|1.0e+03| 8.062740e+02 -4.469853e+01| 0:0:00| chol  1  1
 4|0.785|0.784|2.9e-07|2.7e-03|5.7e+02| 4.726259e+02 -3.265245e+01| 0:0:00| chol  1  1
 5|1.000|0.752|3.1e-08|1.1e-03|3.0e+02| 2.402715e+02 -2.972937e+01| 0:0:00| chol  2  2
 6|0.276|0.247|7.4e-08|8.4e-04|2.7e+02| 2.007793e+02 -2.987627e+01| 0:0:00| chol  2  2
 7|0.498|0.360|1.0e-07|5.6e-04|2.4e+02| 1.596517e+02 -3.401033e+01| 0:0:00| chol  2  2
 8|1.000|0.380|1.0e-07|3.5e-04|2.0e+02| 1.105135e+02 -4.048878e+01| 0:0:00| chol  2  1
 9|0.184|0.638|8.7e-08|1.3e-04|1.6e+02| 9.624953e+01 -4.546775e+01| 0:0:00| chol  2  2
10|0.583|0.691|3.6e-08|4.3e-05|1.1e+02| 4.925485e+01 -5.345287e+01| 0:0:00| chol  2  2
11|1.000|1.000|7.5e-10|1.8e-06|4.9e+01|-5.522912e+00 -5.413622e+01| 0:0:00| chol  2  2
12|1.000|0.945|5.6e-10|9.5e-07|9.7e+00|-4.330423e+01 -5.285821e+01| 0:0:00| chol  2  2
13|0.942|0.967|2.3e-09|4.7e-07|8.0e-01|-5.183033e+01 -5.256592e+01| 0:0:00| chol  2  2
14|0.986|0.986|1.5e-09|2.3e-07|1.2e-02|-5.259634e+01 -5.257731e+01| 0:0:00| chol  3  3
15|0.977|0.984|5.1e-08|1.1e-07|3.4e-04|-5.260726e+01 -5.259227e+01| 0:0:00| chol  3  4
16|1.000|0.928|1.6e-07|8.3e-09|1.5e-04|-5.260733e+01 -5.260648e+01| 0:0:00| chol  3  3
17|0.987|0.988|8.9e-08|1.1e-10|1.4e-05|-5.260756e+01 -5.260755e+01| 0:0:00| chol
  linsysolve: Schur complement matrix not positive definite
  switch to LU factor. lu 30 ^ 8
18|0.667|0.580|5.1e-07|5.6e-11|1.7e-05|-5.260798e+01 -5.260757e+01| 0:0:00| lu 30   2
19|1.000|0.639|1.0e-07|3.0e-11|1.5e-05|-5.260757e+01 -5.260757e+01| 0:0:00| lu  7   2
20|0.970|0.975|1.9e-08|2.5e-12|2.6e-06|-5.260758e+01 -5.260757e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 20
 primal objective value = -5.26075833e+01
 dual   objective value = -5.26075673e+01
 gap := trace(XZ)       = 2.63e-06
 relative gap           = 2.48e-08
 actual relative gap    = -1.50e-07
 rel. primal infeas     = 1.94e-08
 rel. dual   infeas     = 2.55e-12
 norm(X), norm(y), norm(Z) = 1.4e+04, 9.7e+01, 6.6e+01
 norm(A), norm(b), norm(C) = 2.1e+02, 6.5e+02, 7.5e+01
 Total CPU time (secs)  = 0.28
 CPU time per iteration = 0.01
 termination code       =  0
```

```
 DIMACS errors: 6.4e-08  0.0e+00  3.6e-12  0.0e+00  -1.5e-07  2.5e-08
------------------------------------------------------------------

ans =

   52.6076

Epoch... 3
Epoch... 4

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.3e+00|2.6e+06| 4.923447e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.978|0.973|2.2e-02|2.5e-01|1.6e+05| 4.655579e+04  1.979437e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|4.8e+04| 2.977240e+04 -8.008988e+01| 0:0:00| chol  1  1
 3|1.000|0.998|3.0e-08|1.7e-02|2.7e+03| 1.839171e+03 -4.916106e+01| 0:0:00| chol  1  1
 4|1.000|0.716|1.8e-07|8.2e-03|1.6e+03| 1.218159e+03 -3.272411e+01| 0:0:00| chol  1  1
 5|0.586|0.975|7.7e-08|1.7e-03|9.9e+02| 8.960248e+02 -3.252913e+01| 0:0:00| chol  2  2
 6|0.936|0.595|1.4e-08|9.3e-04|5.9e+02| 4.949859e+02 -2.776390e+01| 0:0:00| chol  2  2
 7|0.631|0.381|7.1e-08|6.3e-04|4.8e+02| 3.668555e+02 -2.830224e+01| 0:0:00| chol  2  2
 8|0.794|0.541|6.6e-08|3.2e-04|3.7e+02| 2.804108e+02 -3.600600e+01| 0:0:00| chol  1  1
 9|0.316|0.587|4.5e-08|1.5e-04|3.2e+02| 2.447114e+02 -3.964197e+01| 0:0:00| chol  2  2
10|1.000|0.856|6.1e-10|3.6e-05|1.5e+02| 9.210404e+01 -4.677819e+01| 0:0:00| chol  2  2
11|0.926|0.953|1.8e-10|9.7e-06|3.1e+01|-1.639955e+01 -4.557913e+01| 0:0:00| chol  2  2
12|0.947|0.986|1.5e-10|4.3e-06|3.6e+00|-4.210573e+01 -4.516670e+01| 0:0:00| chol  2  1
13|0.509|0.784|1.8e-08|2.6e-06|2.2e+00|-4.345470e+01 -4.533321e+01| 0:0:00| chol  2  2
14|0.591|1.000|7.7e-09|1.0e-06|1.6e+00|-4.411024e+01 -4.553141e+01| 0:0:00| chol  2  2
15|1.000|1.000|6.0e-10|5.2e-07|4.6e-01|-4.517885e+01 -4.557521e+01| 0:0:00| chol  2  2
16|0.970|0.965|3.9e-10|2.7e-07|1.4e-02|-4.561272e+01 -4.559194e+01| 0:0:00| chol  2  2
17|0.992|0.987|6.9e-08|1.3e-07|4.4e-04|-4.562609e+01 -4.560927e+01| 0:0:00| chol  5  5
18|1.000|0.972|1.2e-07|3.9e-09|2.6e-04|-4.562603e+01 -4.562600e+01| 0:0:00| chol  4  3
19|1.000|0.992|6.5e-09|3.8e-11|8.2e-06|-4.562647e+01 -4.562648e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -4.56264722e+01
 dual   objective value = -4.56264769e+01
 gap := trace(XZ)       = 8.23e-06
 relative gap           = 8.92e-08
 actual relative gap    = 5.12e-08
 rel. primal infeas     = 6.50e-09
 rel. dual   infeas     = 3.83e-11
 norm(X), norm(y), norm(Z) = 1.3e+04, 1.0e+02, 7.5e+01
 norm(A), norm(b), norm(C) = 3.1e+02, 1.5e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
```

```
 DIMACS errors: 2.0e-08  0.0e+00  5.4e-11  0.0e+00  5.1e-08  8.9e-08
------------------------------------------------------------------

ans =

   45.6265

Epoch... 5
Epoch... 6

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.2e+00|2.1e+06| 3.991392e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.977|0.974|2.3e-02|2.4e-01|1.3e+05| 3.797711e+04  1.291584e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.6e-07|5.5e-02|3.7e+04| 2.275727e+04 -6.219591e+01| 0:0:00| chol  1  1
 3|1.000|1.000|4.0e-08|1.6e-02|2.1e+03| 1.404088e+03 -3.989682e+01| 0:0:00| chol  1  1
 4|0.869|0.758|1.7e-07|7.7e-03|1.3e+03| 9.979431e+02 -2.797683e+01| 0:0:00| chol  1  1
 5|0.838|0.977|2.9e-08|1.6e-03|7.2e+02| 6.400924e+02 -2.719034e+01| 0:0:00| chol  1  1
 6|0.973|0.601|9.6e-09|9.2e-04|4.3e+02| 3.476910e+02 -2.501145e+01| 0:0:00| chol  2  1
 7|0.572|0.360|6.6e-08|6.3e-04|3.5e+02| 2.623934e+02 -2.614093e+01| 0:0:00| chol  2  2
 8|0.669|0.511|6.6e-08|3.4e-04|2.9e+02| 2.074306e+02 -3.338748e+01| 0:0:00| chol  2  2
 9|0.288|0.579|4.8e-08|1.6e-04|2.5e+02| 1.815920e+02 -3.684866e+01| 0:0:00| chol  2  2
10|1.000|0.790|8.1e-10|4.8e-05|1.1e+02| 5.866770e+01 -4.343668e+01| 0:0:00| chol  2  2
11|0.852|0.957|1.8e-10|1.0e-05|3.1e+01|-1.510059e+01 -4.419486e+01| 0:0:00| chol  2  2
12|0.941|0.956|1.8e-10|4.4e-06|2.5e+00|-4.188724e+01 -4.386708e+01| 0:0:00| chol  2  2
13|0.967|0.979|1.5e-09|2.1e-06|1.4e-01|-4.413483e+01 -4.404555e+01| 0:0:00| chol  2  3
14|0.080|0.072|1.1e-08|2.1e-06|1.3e-01|-4.414954e+01 -4.405416e+01| 0:0:00| chol  3  3
15|0.048|0.106|1.3e-08|1.9e-06|1.4e-01|-4.416158e+01 -4.407490e+01| 0:0:00| chol  2  3
16|0.114|0.114|2.5e-08|1.7e-06|1.4e-01|-4.416080e+01 -4.410071e+01| 0:0:00| chol  2  2
17|0.122|1.000|2.2e-08|1.3e-07|1.4e-01|-4.416569e+01 -4.429382e+01| 0:0:00| chol  3  3
18|0.977|0.941|6.1e-09|6.9e-08|1.6e-02|-4.428111e+01 -4.428911e+01| 0:0:00| chol  2  3
19|0.977|0.981|2.5e-09|3.4e-08|5.2e-04|-4.429610e+01 -4.429252e+01| 0:0:00| chol  3  3
20|0.980|0.979|3.2e-08|7.2e-10|1.5e-05|-4.429654e+01 -4.429645e+01| 0:0:00| chol
  linsysolve: Schur complement matrix not positive definite
  switch to LU factor. lu 30 ^ 7
  stop: progress in duality gap has deteriorated, 5.3e-04
21|0.940|0.759|3.2e-08|7.2e-10|1.5e-05|-4.429654e+01 -4.429645e+01| 0:0:00|
-------------------------------------------------------------------
 number of iterations   = 21
 primal objective value = -4.42965413e+01
 dual   objective value = -4.42964549e+01
 gap := trace(XZ)       = 1.52e-05
 relative gap           = 1.69e-07
 actual relative gap    = -9.64e-07
 rel. primal infeas     = 3.20e-08
 rel. dual   infeas     = 7.24e-10
 norm(X), norm(y), norm(Z) = 1.2e+04, 9.9e+01, 7.0e+01
```

```
 norm(A), norm(b), norm(C) = 2.7e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.13
 CPU time per iteration = 0.01
 termination code       = -8
 DIMACS errors: 9.9e-08  0.0e+00  1.0e-09  0.0e+00  -9.6e-07  1.7e-07
------------------------------------------------------------------

ans =

   44.2965

Epoch... 7
Epoch... 8

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.2e+00|1.9e+06| 3.564479e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.976|0.974|2.4e-02|2.4e-01|1.2e+05| 3.404755e+04  1.040024e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.2e-07|3.3e-02|3.2e+04| 2.349371e+04 -6.184024e+01| 0:0:00| chol  1  1
 3|0.992|0.996|4.3e-08|1.0e-02|1.2e+03| 8.317492e+02 -4.024966e+01| 0:0:00| chol  1  1
 4|0.766|0.533|2.4e-07|6.2e-03|9.2e+02| 7.013583e+02 -2.780446e+01| 0:0:00| chol  1  1
 5|0.612|0.873|9.4e-08|1.6e-03|6.2e+02| 5.400914e+02 -2.486878e+01| 0:0:00| chol  2  1
 6|0.728|0.521|2.8e-08|8.9e-04|4.4e+02| 3.604747e+02 -2.439458e+01| 0:0:00| chol  2  1
 7|0.553|0.293|1.1e-07|6.5e-04|3.8e+02| 2.820956e+02 -2.589223e+01| 0:0:00| chol  1  2
 8|0.280|0.570|9.9e-08|3.0e-04|3.4e+02| 2.591260e+02 -3.704888e+01| 0:0:00| chol  2  2
 9|0.699|0.700|3.0e-08|1.1e-04|2.2e+02| 1.606450e+02 -3.893118e+01| 0:0:00| chol  2  2
10|1.000|1.000|7.1e-10|1.0e-05|8.6e+01| 3.885846e+01 -4.531360e+01| 0:0:00| chol  2  2
11|0.923|0.932|3.3e-10|5.3e-06|8.9e+00|-3.491303e+01 -4.322076e+01| 0:0:00| chol  2  2
12|0.894|0.931|1.5e-10|2.7e-06|1.3e+00|-4.221666e+01 -4.327026e+01| 0:0:00| chol  2  2
13|1.000|0.992|2.4e-09|1.3e-06|5.7e-01|-4.295643e+01 -4.339950e+01| 0:0:00| chol  2  2
14|0.325|0.352|5.1e-09|1.0e-06|4.7e-01|-4.307225e+01 -4.342128e+01| 0:0:00| chol  2  2
15|1.000|1.000|1.5e-09|3.1e-07|2.3e-01|-4.330672e+01 -4.349736e+01| 0:0:00| chol  2  2
16|0.963|0.974|2.2e-09|1.6e-07|9.1e-03|-4.351464e+01 -4.350519e+01| 0:0:00| chol  3  3
17|0.976|0.981|9.7e-09|8.0e-08|2.7e-04|-4.352318e+01 -4.351421e+01| 0:0:00| chol  3  3
18|0.777|1.000|7.2e-08|1.5e-10|1.9e-04|-4.352327e+01 -4.352342e+01| 0:0:00| chol  6  7
19|1.000|0.995|8.7e-09|3.7e-11|4.6e-05|-4.352338e+01 -4.352341e+01| 0:0:00| chol  6  9
20|1.000|0.990|1.7e-09|1.4e-12|1.3e-06|-4.352341e+01 -4.352341e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 20
 primal objective value = -4.35234086e+01
 dual   objective value = -4.35234117e+01
 gap := trace(XZ)       = 1.34e-06
 relative gap           = 1.53e-08
 actual relative gap    = 3.51e-08
 rel. primal infeas     = 1.67e-09
 rel. dual   infeas     = 1.41e-12
```

```
 norm(X), norm(y), norm(Z) = 1.1e+04, 9.7e+01, 6.7e+01
 norm(A), norm(b), norm(C) = 2.6e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 5.2e-09  0.0e+00  2.0e-12  0.0e+00  3.5e-08  1.5e-08
------------------------------------------------------------------

ans =

   43.5234

Epoch... 9
Epoch... 10

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.3e+00|1.8e+06| 3.405499e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.975|0.972|2.5e-02|2.1e-01|1.0e+05| 3.318282e+04  9.528572e+00| 0:0:00| chol  1  1
 2|1.000|1.000|3.7e-07|2.0e-02|2.9e+04| 2.351302e+04 -5.998854e+01| 0:0:00| chol  1  1
 3|0.973|0.995|3.7e-08|6.0e-03|1.2e+03| 8.888605e+02 -4.130645e+01| 0:0:00| chol  1  1
 4|0.653|0.536|2.2e-07|3.7e-03|9.1e+02| 7.389378e+02 -2.857383e+01| 0:0:00| chol  1  1
 5|0.423|0.737|1.3e-07|1.4e-03|7.1e+02| 6.267872e+02 -2.670369e+01| 0:0:00| chol  2  2
 6|0.496|0.473|8.2e-08|8.0e-04|5.7e+02| 4.874399e+02 -2.342908e+01| 0:0:00| chol  2  1
 7|0.462|0.309|1.1e-07|5.7e-04|5.0e+02| 4.013886e+02 -2.696991e+01| 0:0:00| chol  2  2
 8|1.000|0.525|6.7e-08|2.8e-04|3.8e+02| 2.907646e+02 -3.806373e+01| 0:0:00| chol  2  1
 9|0.346|0.596|4.6e-08|1.2e-04|3.1e+02| 2.391834e+02 -4.013928e+01| 0:0:00| chol  2  2
10|1.000|0.924|6.9e-10|1.5e-05|1.4e+02| 8.641531e+01 -4.577049e+01| 0:0:00| chol  1  2
11|0.877|0.966|1.8e-10|3.4e-06|3.1e+01|-1.276445e+01 -4.350650e+01| 0:0:00| chol  2  2
12|0.922|0.933|4.1e-10|1.6e-06|3.6e+00|-3.946120e+01 -4.284462e+01| 0:0:00| chol  2  2
13|0.950|0.871|4.7e-10|8.6e-07|5.7e-01|-4.237149e+01 -4.284841e+01| 0:0:00| chol  2  2
14|0.786|1.000|2.4e-08|3.8e-07|3.4e-01|-4.259110e+01 -4.289099e+01| 0:0:00| chol  2  2
15|0.930|0.908|1.7e-09|2.1e-07|2.8e-02|-4.289468e+01 -4.290028e+01| 0:0:00| chol  2  2
16|0.958|1.000|1.9e-08|9.4e-08|9.8e-03|-4.291242e+01 -4.291180e+01| 0:0:00| chol  2  2
17|1.000|1.000|1.1e-08|4.7e-08|3.3e-03|-4.291870e+01 -4.291680e+01| 0:0:00| chol  2  2
18|0.924|0.996|7.2e-08|5.5e-10|4.3e-04|-4.292150e+01 -4.292188e+01| 0:0:00| chol  4  4
19|1.000|0.987|5.3e-09|8.0e-11|8.8e-05|-4.292182e+01 -4.292190e+01| 0:0:00| chol  7  7
20|1.000|0.991|6.1e-09|9.0e-12|1.0e-05|-4.292189e+01 -4.292190e+01| 0:0:00| chol
  warning: symqmr failed: 0.3
  switch to LU factor. lu 30   3
21|1.000|0.991|1.8e-08|3.5e-13|3.3e-07|-4.292190e+01 -4.292190e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 21
 primal objective value = -4.29219040e+01
 dual   objective value = -4.29218992e+01
 gap := trace(XZ)       = 3.26e-07
```

```
 relative gap           = 3.75e-09
 actual relative gap    = -5.57e-08
 rel. primal infeas     = 1.75e-08
 rel. dual   infeas     = 3.52e-13
 norm(X), norm(y), norm(Z) = 1.1e+04, 9.6e+01, 6.5e+01
 norm(A), norm(b), norm(C) = 2.6e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 5.5e-08  0.0e+00  4.9e-13  0.0e+00  -5.6e-08  3.7e-09
------------------------------------------------------------------

ans =

   42.9219

Epoch... 11
Epoch... 12

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.3e+00|1.8e+06| 3.355908e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.975|0.972|2.5e-02|2.1e-01|1.0e+05| 3.272984e+04  9.322746e+00| 0:0:00| chol  1  1
 2|1.000|1.000|3.7e-07|2.0e-02|2.9e+04| 2.318092e+04 -5.913241e+01| 0:0:00| chol  1  1
 3|0.973|0.995|3.7e-08|6.0e-03|1.1e+03| 8.772197e+02 -4.063044e+01| 0:0:00| chol  1  1
 4|0.646|0.549|2.1e-07|3.7e-03|9.0e+02| 7.299910e+02 -2.815418e+01| 0:0:00| chol  1  1
 5|0.432|0.736|1.2e-07|1.4e-03|7.0e+02| 6.157514e+02 -2.639220e+01| 0:0:00| chol  2  2
 6|0.486|0.473|8.2e-08|8.0e-04|5.7e+02| 4.819875e+02 -2.314158e+01| 0:0:00| chol  2  2
 7|0.389|0.318|1.0e-07|5.6e-04|5.1e+02| 4.098963e+02 -2.703536e+01| 0:0:00| chol  2  2
 8|0.859|0.585|6.8e-08|2.5e-04|3.8e+02| 2.962783e+02 -3.789397e+01| 0:0:00| chol  2  2
 9|0.375|0.881|4.6e-08|4.0e-05|3.1e+02| 2.523474e+02 -4.465278e+01| 0:0:00| chol  2  2
10|1.000|0.870|2.8e-10|1.0e-05|6.7e+01| 2.166092e+01 -4.355118e+01| 0:0:00| chol  2  2
11|0.859|0.967|1.4e-10|3.3e-06|1.8e+01|-2.511284e+01 -4.263873e+01| 0:0:00| chol  2  2
12|0.947|0.966|3.5e-10|1.6e-06|1.7e+00|-4.075995e+01 -4.226042e+01| 0:0:00| chol  2  2
13|0.571|0.796|3.5e-09|9.2e-07|1.1e+00|-4.135832e+01 -4.231655e+01| 0:0:00| chol  2  2
14|0.881|1.000|1.3e-09|3.8e-07|2.3e-01|-4.216373e+01 -4.235200e+01| 0:0:00| chol  2  2
15|1.000|1.000|2.2e-08|1.9e-07|8.6e-02|-4.230457e+01 -4.237030e+01| 0:0:00| chol  2  2
16|0.947|0.984|1.7e-09|9.6e-08|4.6e-03|-4.238324e+01 -4.237762e+01| 0:0:00| chol  3  3
17|1.000|0.932|9.0e-08|6.7e-09|2.0e-03|-4.238580e+01 -4.238716e+01| 0:0:00| chol  2  3
18|0.897|0.983|1.1e-08|3.2e-10|2.4e-04|-4.238759e+01 -4.238779e+01| 0:0:00| chol  6  6
19|1.000|0.740|6.1e-08|1.9e-10|1.3e-04|-4.238762e+01 -4.238780e+01| 0:0:00| chol  4  4
20|0.975|0.989|3.4e-09|1.2e-11|1.2e-05|-4.238778e+01 -4.238780e+01| 0:0:00| chol
  warning: symqmr failed: 0.3
  switch to LU factor. lu 30   6
  stop: primal infeas has deteriorated too much, 2.1e-07
21|1.000|0.868|3.4e-09|1.2e-11|1.2e-05|-4.238778e+01 -4.238780e+01| 0:0:00|
------------------------------------------------------------------
```

```
 number of iterations   = 21
 primal objective value = -4.23877839e+01
 dual   objective value = -4.23877970e+01
 gap := trace(XZ)       = 1.17e-05
 relative gap           = 1.37e-07
 actual relative gap    = 1.53e-07
 rel. primal infeas     = 3.44e-09
 rel. dual   infeas     = 1.20e-11
 norm(X), norm(y), norm(Z) = 1.1e+04, 9.6e+01, 6.4e+01
 norm(A), norm(b), norm(C) = 2.5e+02, 1.0e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       = -7
 DIMACS errors: 1.1e-08  0.0e+00  1.7e-11  0.0e+00  1.5e-07  1.4e-07
------------------------------------------------------------------

ans =

   42.3878

Epoch... 13
Epoch... 14

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.3e+00|1.8e+06| 3.330782e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.975|0.972|2.5e-02|2.1e-01|1.0e+05| 3.250638e+04  9.396550e+00| 0:0:00| chol  1  1
 2|1.000|1.000|3.7e-07|2.0e-02|2.8e+04| 2.311180e+04 -5.887854e+01| 0:0:00| chol  1  1
 3|0.973|0.995|3.6e-08|6.0e-03|1.1e+03| 8.706580e+02 -4.027474e+01| 0:0:00| chol  1  1
 4|0.645|0.551|2.1e-07|3.7e-03|8.9e+02| 7.246400e+02 -2.794660e+01| 0:0:00| chol  1  1
 5|0.434|0.735|1.2e-07|1.4e-03|6.9e+02| 6.104174e+02 -2.620908e+01| 0:0:00| chol  2  2
 6|0.477|0.474|8.3e-08|7.9e-04|5.6e+02| 4.801542e+02 -2.299662e+01| 0:0:00| chol  2  2
 7|0.329|0.333|9.6e-08|5.5e-04|5.1e+02| 4.187906e+02 -2.724085e+01| 0:0:00| chol  1  2
 8|0.507|0.657|7.5e-08|2.0e-04|4.1e+02| 3.404671e+02 -3.786659e+01| 0:0:00| chol  2  2
 9|0.585|1.000|4.0e-08|1.2e-05|2.8e+02| 2.306817e+02 -4.456771e+01| 0:0:00| chol  2  2
10|1.000|1.000|1.0e-10|6.0e-06|9.5e+01| 4.954201e+01 -4.398642e+01| 0:0:00| chol  2  2
11|0.968|0.973|4.4e-10|3.1e-06|1.1e+01|-3.165486e+01 -4.198350e+01| 0:0:00| chol  2  2
12|0.937|0.899|2.0e-10|1.7e-06|1.3e+00|-4.068293e+01 -4.177201e+01| 0:0:00| chol  2  2
13|0.818|1.000|4.7e-09|7.5e-07|7.0e-01|-4.121986e+01 -4.184352e+01| 0:0:00| chol  2  2
14|0.952|0.971|5.0e-10|3.9e-07|4.3e-02|-4.185758e+01 -4.186043e+01| 0:0:00| chol  2  2
15|1.000|1.000|3.2e-08|1.9e-07|6.1e-03|-4.189367e+01 -4.188028e+01| 0:0:00| chol  3  3
16|1.000|1.000|2.5e-08|1.3e-10|4.5e-04|-4.189919e+01 -4.189961e+01| 0:0:00| chol  4  3
17|0.989|0.989|1.1e-09|6.2e-12|5.4e-06|-4.189959e+01 -4.189959e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 17
 primal objective value = -4.18995877e+01
```

```
 dual   objective value = -4.18995921e+01
 gap := trace(XZ)       = 5.42e-06
 relative gap           = 6.39e-08
 actual relative gap    = 5.20e-08
 rel. primal infeas     = 1.10e-09
 rel. dual   infeas     = 6.19e-12
 norm(X), norm(y), norm(Z) = 1.0e+04, 9.5e+01, 6.4e+01
 norm(A), norm(b), norm(C) = 2.5e+02, 1.0e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.5e-09  0.0e+00  8.7e-12  0.0e+00  5.2e-08  6.4e-08
------------------------------------------------------------------

ans =

   41.8996

Epoch... 15
Epoch... 16

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.3e+00|1.8e+06| 3.322529e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.975|0.972|2.5e-02|2.1e-01|1.0e+05| 3.244204e+04  9.556011e+00| 0:0:00| chol  1  1
 2|1.000|1.000|3.7e-07|2.0e-02|2.9e+04| 2.315475e+04 -5.887310e+01| 0:0:00| chol  1  1
 3|0.973|0.995|3.5e-08|6.0e-03|1.1e+03| 8.665478e+02 -4.004658e+01| 0:0:00| chol  1  1
 4|0.647|0.549|2.2e-07|3.7e-03|8.9e+02| 7.211062e+02 -2.781745e+01| 0:0:00| chol  1  1
 5|0.432|0.736|1.2e-07|1.4e-03|6.9e+02| 6.079838e+02 -2.605963e+01| 0:0:00| chol  2  2
 6|0.471|0.473|8.5e-08|8.0e-04|5.6e+02| 4.801125e+02 -2.292103e+01| 0:0:00| chol  2  1
 7|0.309|0.341|9.4e-08|5.4e-04|5.1e+02| 4.222981e+02 -2.731907e+01| 0:0:00| chol  2  2
 8|0.447|0.680|7.5e-08|1.9e-04|4.2e+02| 3.493837e+02 -3.769966e+01| 0:0:00| chol  2  2
 9|0.628|1.000|3.8e-08|1.2e-05|2.6e+02| 2.173613e+02 -4.403281e+01| 0:0:00| chol  2  2
10|1.000|1.000|7.4e-11|6.0e-06|1.1e+02| 6.215934e+01 -4.392518e+01| 0:0:00| chol  2  2
11|0.920|0.840|7.4e-10|3.5e-06|1.3e+01|-2.927173e+01 -4.173211e+01| 0:0:00| chol  2  2
12|1.000|0.903|1.9e-10|1.7e-06|8.0e-01|-4.068837e+01 -4.131802e+01| 0:0:00| chol  2  2
13|0.861|0.970|6.9e-10|7.8e-07|4.0e-01|-4.104402e+01 -4.136516e+01| 0:0:00| chol  2  2
14|0.952|0.977|4.8e-10|3.8e-07|2.3e-02|-4.140885e+01 -4.139099e+01| 0:0:00| chol  3  3
15|1.000|0.556|8.9e-08|2.8e-07|1.7e-02|-4.141560e+01 -4.140271e+01| 0:0:00| chol  2  2
16|0.119|0.596|7.7e-08|1.7e-07|1.6e-02|-4.141793e+01 -4.141448e+01| 0:0:00| chol  4  3
17|1.000|0.952|2.4e-07|5.3e-08|8.2e-03|-4.142500e+01 -4.142706e+01| 0:0:00| chol  3  3
18|0.528|1.000|1.1e-07|2.5e-10|5.6e-03|-4.142757e+01 -4.143304e+01| 0:0:00| chol  4  4
19|0.955|0.982|3.4e-08|2.3e-10|2.9e-04|-4.143259e+01 -4.143286e+01| 0:0:00| chol  7  7
20|0.989|0.994|3.0e-08|3.5e-11|4.3e-05|-4.143283e+01 -4.143285e+01| 0:0:00| chol 20 21
21|1.000|0.994|6.5e-08|6.1e-12|7.5e-06|-4.143288e+01 -4.143285e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
```

```
 number of iterations   = 21
 primal objective value = -4.14328776e+01
 dual   objective value = -4.14328506e+01
 gap := trace(XZ)       = 7.53e-06
 relative gap           = 8.98e-08
 actual relative gap    = -3.23e-07
 rel. primal infeas     = 6.52e-08
 rel. dual   infeas     = 6.09e-12
 norm(X), norm(y), norm(Z) = 1.2e+04, 9.5e+01, 6.3e+01
 norm(A), norm(b), norm(C) = 2.5e+02, 1.0e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 2.0e-07  0.0e+00  8.5e-12  0.0e+00  -3.2e-07  9.0e-08
------------------------------------------------------------------

ans =

   41.4329

Epoch... 17
Epoch... 18

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.3e+00|1.8e+06| 3.343865e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.975|0.972|2.5e-02|2.1e-01|1.0e+05| 3.265392e+04  9.994513e+00| 0:0:00| chol  1  1
 2|1.000|1.000|3.7e-07|2.0e-02|2.9e+04| 2.341320e+04 -5.945587e+01| 0:0:00| chol  1  1
 3|0.973|0.995|3.4e-08|6.0e-03|1.1e+03| 8.671045e+02 -4.008176e+01| 0:0:00| chol  1  1
 4|0.659|0.529|2.2e-07|3.8e-03|8.9e+02| 7.208272e+02 -2.787679e+01| 0:0:00| chol  1  1
 5|0.417|0.736|1.3e-07|1.4e-03|7.0e+02| 6.126500e+02 -2.603916e+01| 0:0:00| chol  1  1
 6|0.468|0.475|8.8e-08|8.0e-04|5.7e+02| 4.844040e+02 -2.292987e+01| 0:0:00| chol  2  2
 7|0.344|0.330|9.8e-08|5.5e-04|5.1e+02| 4.203704e+02 -2.713350e+01| 0:0:00| chol  2  2
 8|0.550|0.653|7.4e-08|2.1e-04|4.1e+02| 3.372964e+02 -3.776548e+01| 0:0:00| chol  2  2
 9|0.559|1.000|4.0e-08|1.2e-05|2.9e+02| 2.388951e+02 -4.400389e+01| 0:0:00| chol  2  2
10|1.000|1.000|2.9e-10|6.0e-06|9.2e+01| 4.778700e+01 -4.298652e+01| 0:0:00| chol  2  2
11|0.975|1.000|3.3e-10|3.0e-06|1.6e+01|-2.538113e+01 -4.132891e+01| 0:0:00| chol  2  2
12|0.946|0.866|4.0e-10|1.7e-06|1.3e+00|-3.976341e+01 -4.090428e+01| 0:0:00| chol  2  2
13|0.977|0.885|1.5e-09|8.6e-07|2.1e-01|-4.081549e+01 -4.092744e+01| 0:0:00| chol  2  2
14|1.000|1.000|1.6e-09|3.8e-07|7.8e-02|-4.093697e+01 -4.097257e+01| 0:0:00| chol  2  2
15|0.975|0.985|4.5e-09|1.9e-07|2.4e-03|-4.100980e+01 -4.099064e+01| 0:0:00| chol  3  3
16|1.000|1.000|1.1e-07|2.7e-10|6.6e-04|-4.101150e+01 -4.101219e+01| 0:0:00| chol  4  4
17|0.983|0.988|4.0e-09|1.3e-11|1.2e-05|-4.101215e+01 -4.101217e+01| 0:0:00| chol
  linsysolve: Schur complement matrix not positive definite
  switch to LU factor. lu 19 ^20
  stop: primal infeas has deteriorated too much, 1.6e-07
18|1.000|0.989|4.0e-09|1.3e-11|1.2e-05|-4.101215e+01 -4.101217e+01| 0:0:00|
```

```
-----------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -4.10121522e+01
 dual   objective value = -4.10121680e+01
 gap := trace(XZ)       = 1.17e-05
 relative gap           = 1.41e-07
 actual relative gap    = 1.90e-07
 rel. primal infeas     = 4.01e-09
 rel. dual   infeas     = 1.25e-11
 norm(X), norm(y), norm(Z) = 1.1e+04, 9.5e+01, 6.3e+01
 norm(A), norm(b), norm(C) = 2.6e+02, 1.0e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       = -7
 DIMACS errors: 1.3e-08  0.0e+00  1.8e-11  0.0e+00  1.9e-07  1.4e-07
-----------------------------------------------------------------

ans =

   41.0122

Epoch... 19
Epoch... 20

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*****************************************************************
   SDPT3: Infeasible path-following algorithms
*****************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-----------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.4e+00|1.9e+06| 3.370421e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.975|0.972|2.5e-02|2.1e-01|1.0e+05| 3.291435e+04  1.026456e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.7e-07|2.0e-02|2.9e+04| 2.365757e+04 -6.017353e+01| 0:0:00| chol  1  1
 3|0.974|0.995|3.3e-08|6.0e-03|1.1e+03| 8.685563e+02 -4.020287e+01| 0:0:00| chol  1  1
 4|0.672|0.509|2.3e-07|3.9e-03|8.9e+02| 7.213165e+02 -2.800003e+01| 0:0:00| chol  1  1
 5|0.402|0.737|1.4e-07|1.4e-03|7.0e+02| 6.176293e+02 -2.612440e+01| 0:0:00| chol  1  1
 6|0.465|0.477|9.2e-08|8.1e-04|5.7e+02| 4.886959e+02 -2.296715e+01| 0:0:00| chol  2  2
 7|0.370|0.324|1.0e-07|5.6e-04|5.1e+02| 4.198306e+02 -2.700271e+01| 0:0:00| chol  2  2
 8|0.618|0.635|7.4e-08|2.2e-04|4.1e+02| 3.318015e+02 -3.776101e+01| 0:0:00| chol  2  2
 9|0.489|0.916|4.3e-08|3.0e-05|3.1e+02| 2.563011e+02 -4.302327e+01| 0:0:00| chol  2  2
10|1.000|1.000|2.0e-10|6.0e-06|7.9e+01| 3.597643e+01 -4.218539e+01| 0:0:00| chol  2  2
11|0.841|1.000|2.5e-10|3.0e-06|2.3e+01|-1.840146e+01 -4.092478e+01| 0:0:00| chol  2  2
12|0.965|0.965|4.6e-10|1.6e-06|2.1e+00|-3.853006e+01 -4.048520e+01| 0:0:00| chol  2  2
13|0.865|0.958|2.8e-09|7.9e-07|6.7e-01|-3.995375e+01 -4.053217e+01| 0:0:00| chol  2  2
14|0.963|0.981|5.8e-10|3.8e-07|2.7e-02|-4.057453e+01 -4.055915e+01| 0:0:00| chol  2  2
15|1.000|1.000|4.6e-08|1.9e-07|4.2e-03|-4.059686e+01 -4.058037e+01| 0:0:00| chol  3  3
16|1.000|1.000|4.9e-08|1.7e-10|6.3e-04|-4.060033e+01 -4.060094e+01| 0:0:00| chol  4  4
17|0.988|0.989|1.5e-09|8.9e-12|8.4e-06|-4.060092e+01 -4.060092e+01| 0:0:00| chol
  linsysolve: Schur complement matrix not positive definite
  switch to LU factor. lu 26 ^ 9
18|1.000|0.990|2.2e-08|3.8e-13|3.6e-07|-4.060094e+01 -4.060092e+01| 0:0:00|
```

```
  stop: max(relative gap, infeasibilities) < 1.00e-07
-----------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -4.06009392e+01
 dual   objective value = -4.06009224e+01
 gap := trace(XZ)       = 3.58e-07
 relative gap           = 4.35e-09
 actual relative gap    = -2.04e-07
 rel. primal infeas     = 2.25e-08
 rel. dual   infeas     = 3.85e-13
 norm(X), norm(y), norm(Z) = 1.1e+04, 9.4e+01, 6.2e+01
 norm(A), norm(b), norm(C) = 2.6e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 7.0e-08  0.0e+00  5.4e-13  0.0e+00  -2.0e-07  4.4e-09
-----------------------------------------------------------------

ans =

   40.6009

Epoch... 21
Epoch... 22

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*****************************************************************
   SDPT3: Infeasible path-following algorithms
*****************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-----------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.4e+00|1.9e+06| 3.395729e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.976|0.972|2.4e-02|2.1e-01|1.0e+05| 3.316462e+04  1.057362e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.6e-07|2.0e-02|2.9e+04| 2.387970e+04 -6.070960e+01| 0:0:00| chol  1  1
 3|0.974|0.995|3.2e-08|6.0e-03|1.1e+03| 8.693943e+02 -4.024008e+01| 0:0:00| chol  1  1
 4|0.682|0.494|2.4e-07|3.9e-03|9.0e+02| 7.214936e+02 -2.805663e+01| 0:0:00| chol  1  1
 5|0.392|0.737|1.5e-07|1.4e-03|7.1e+02| 6.209115e+02 -2.619009e+01| 0:0:00| chol  2  2
 6|0.462|0.479|9.6e-08|8.2e-04|5.8e+02| 4.920838e+02 -2.293698e+01| 0:0:00| chol  1  2
 7|0.357|0.327|1.0e-07|5.7e-04|5.2e+02| 4.252298e+02 -2.700955e+01| 0:0:00| chol  2  2
 8|0.517|0.664|7.7e-08|2.1e-04|4.2e+02| 3.490350e+02 -3.782036e+01| 0:0:00| chol  2  2
 9|0.544|0.922|4.1e-08|2.7e-05|3.0e+02| 2.543007e+02 -4.258887e+01| 0:0:00| chol  2  2
10|1.000|1.000|1.6e-10|6.0e-06|8.7e+01| 4.334512e+01 -4.206629e+01| 0:0:00| chol  2  2
11|0.914|1.000|2.4e-10|3.0e-06|2.1e+01|-1.961850e+01 -4.058653e+01| 0:0:00| chol  2  2
12|0.954|0.895|4.8e-10|1.7e-06|1.7e+00|-3.856036e+01 -4.009824e+01| 0:0:00| chol  2  2
13|0.957|0.938|2.7e-09|8.1e-07|3.1e-01|-3.990819e+01 -4.012725e+01| 0:0:00| chol  2  2
14|0.978|0.978|1.1e-09|3.9e-07|9.4e-03|-4.019243e+01 -4.016059e+01| 0:0:00| chol  2  3
15|1.000|1.000|1.9e-08|1.9e-07|1.3e-03|-4.020026e+01 -4.018139e+01| 0:0:00| chol  4  4
16|1.000|0.968|8.4e-08|6.2e-09|5.5e-04|-4.020106e+01 -4.020084e+01| 0:0:00| chol  3  3
17|0.984|0.980|3.5e-09|1.3e-10|9.7e-06|-4.020146e+01 -4.020145e+01| 0:0:00| chol  8 12
18|0.993|0.990|1.4e-08|1.6e-12|2.7e-07|-4.020146e+01 -4.020146e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
```

```
------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -4.02014638e+01
 dual   objective value = -4.02014630e+01
 gap := trace(XZ)       = 2.67e-07
 relative gap           = 3.28e-09
 actual relative gap    = -9.49e-09
 rel. primal infeas     = 1.41e-08
 rel. dual   infeas     = 1.63e-12
 norm(X), norm(y), norm(Z) = 1.1e+04, 9.4e+01, 6.2e+01
 norm(A), norm(b), norm(C) = 2.6e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.13
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 4.4e-08  0.0e+00  2.3e-12  0.0e+00  -9.5e-09  3.3e-09
------------------------------------------------------------

ans =

   40.2015

Epoch... 23
Epoch... 24

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*****************************************************************
   SDPT3: Infeasible path-following algorithms
*****************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.4e+00|1.9e+06| 3.409385e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.976|0.972|2.4e-02|2.2e-01|1.1e+05| 3.330347e+04  1.089310e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.6e-07|2.0e-02|3.0e+04| 2.407618e+04 -6.120714e+01| 0:0:00| chol  1  1
 3|0.974|0.994|3.2e-08|6.0e-03|1.1e+03| 8.695325e+02 -4.026653e+01| 0:0:00| chol  1  1
 4|0.692|0.481|2.5e-07|4.0e-03|9.0e+02| 7.210206e+02 -2.810824e+01| 0:0:00| chol  1  1
 5|0.383|0.738|1.5e-07|1.4e-03|7.1e+02| 6.227308e+02 -2.628437e+01| 0:0:00| chol  1  2
 6|0.458|0.482|9.9e-08|8.2e-04|5.8e+02| 4.943437e+02 -2.289300e+01| 0:0:00| chol  2  2
 7|0.317|0.336|1.0e-07|5.6e-04|5.3e+02| 4.342824e+02 -2.714315e+01| 0:0:00| chol  1  2
 8|0.399|0.734|8.0e-08|1.7e-04|4.3e+02| 3.699591e+02 -3.796647e+01| 0:0:00| chol  2  1
 9|0.643|1.000|3.6e-08|1.2e-05|2.8e+02| 2.310127e+02 -4.272692e+01| 0:0:00| chol  2  2
10|1.000|1.000|2.3e-10|6.0e-06|1.0e+02| 5.800061e+01 -4.221183e+01| 0:0:00| chol  2  2
11|1.000|1.000|4.7e-10|3.0e-06|1.4e+01|-2.600491e+01 -3.999010e+01| 0:0:00| chol  2  2
12|0.942|0.870|1.7e-10|1.7e-06|1.2e+00|-3.864850e+01 -3.968766e+01| 0:0:00| chol  2  2
13|0.989|0.929|1.0e-09|8.2e-07|2.8e-01|-3.955014e+01 -3.974092e+01| 0:0:00| chol  2  2
14|0.976|0.982|1.1e-09|3.8e-07|1.0e-02|-3.980475e+01 -3.977513e+01| 0:0:00| chol  3  2
15|1.000|1.000|8.5e-08|1.9e-07|7.7e-04|-3.981404e+01 -3.979521e+01| 0:0:00| chol  4  4
16|1.000|0.994|2.1e-07|1.3e-09|3.8e-04|-3.981436e+01 -3.981466e+01| 0:0:00| chol  3  3
17|0.987|0.988|3.0e-09|2.0e-11|5.4e-06|-3.981477e+01 -3.981477e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------
 number of iterations   = 17
```

```
 primal objective value = -3.98147659e+01
 dual   objective value = -3.98147673e+01
 gap := trace(XZ)       = 5.37e-06
 relative gap           = 6.66e-08
 actual relative gap    = 1.70e-08
 rel. primal infeas     = 2.95e-09
 rel. dual   infeas     = 2.04e-11
 norm(X), norm(y), norm(Z) = 1.0e+04, 9.4e+01, 6.2e+01
 norm(A), norm(b), norm(C) = 2.6e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 9.2e-09  0.0e+00  2.9e-11  0.0e+00  1.7e-08  6.7e-08
------------------------------------------------------------------

ans =

   39.8148

Epoch... 25
Epoch... 26

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.4e+00|1.9e+06| 3.423429e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.976|0.972|2.4e-02|2.2e-01|1.1e+05| 3.344562e+04  1.119813e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.6e-07|2.0e-02|3.0e+04| 2.423812e+04 -6.168260e+01| 0:0:00| chol  1  1
 3|0.975|0.994|3.2e-08|6.0e-03|1.1e+03| 8.695259e+02 -4.029268e+01| 0:0:00| chol  1  1
 4|0.701|0.466|2.6e-07|4.0e-03|9.0e+02| 7.205699e+02 -2.816904e+01| 0:0:00| chol  1  1
 5|0.375|0.737|1.6e-07|1.5e-03|7.1e+02| 6.244683e+02 -2.644073e+01| 0:0:00| chol  2  2
 6|0.454|0.479|1.0e-07|8.4e-04|5.8e+02| 4.964136e+02 -2.287804e+01| 0:0:00| chol  2  1
 7|0.306|0.339|1.0e-07|5.7e-04|5.3e+02| 4.382331e+02 -2.709126e+01| 0:0:00| chol  2  2
 8|0.364|0.770|8.2e-08|1.5e-04|4.4e+02| 3.783988e+02 -3.799201e+01| 0:0:00| chol  2  2
 9|0.674|1.000|3.4e-08|1.2e-05|2.7e+02| 2.235928e+02 -4.247758e+01| 0:0:00| chol  2  2
10|1.000|1.000|1.5e-10|6.0e-06|1.0e+02| 6.049522e+01 -4.196714e+01| 0:0:00| chol  2  2
11|1.000|0.824|3.1e-10|3.5e-06|1.4e+01|-2.639800e+01 -3.992476e+01| 0:0:00| chol  2  2
12|0.966|0.863|1.9e-10|1.8e-06|9.5e-01|-3.857511e+01 -3.934619e+01| 0:0:00| chol  2  2
13|0.935|0.920|5.4e-10|8.3e-07|2.7e-01|-3.918597e+01 -3.937143e+01| 0:0:00| chol  2  2
14|0.973|0.978|8.5e-10|3.9e-07|1.6e-02|-3.942748e+01 -3.940414e+01| 0:0:00| chol  2  2
15|0.942|1.000|1.1e-08|1.9e-07|1.8e-03|-3.944096e+01 -3.942371e+01| 0:0:00| chol  3  4
16|1.000|0.970|1.5e-07|5.7e-09|6.9e-04|-3.944198e+01 -3.944220e+01| 0:0:00| chol  3  3
17|0.965|0.986|5.8e-09|1.0e-10|2.6e-05|-3.944273e+01 -3.944274e+01| 0:0:00| chol  6  7
18|1.000|0.995|3.8e-08|7.6e-12|7.9e-06|-3.944271e+01 -3.944275e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -3.94427135e+01
```

```
 dual   objective value = -3.94427481e+01
 gap := trace(XZ)       = 7.91e-06
 relative gap           = 9.90e-08
 actual relative gap    = 4.33e-07
 rel. primal infeas     = 3.79e-08
 rel. dual   infeas     = 7.57e-12
 norm(X), norm(y), norm(Z) = 1.0e+04, 9.4e+01, 6.2e+01
 norm(A), norm(b), norm(C) = 2.6e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 1.2e-07  0.0e+00  1.1e-11  0.0e+00  4.3e-07  9.9e-08
------------------------------------------------------------------

ans =

   39.4427

Epoch... 27
Epoch... 28

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.5e+00|1.9e+06| 3.446139e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.976|0.972|2.4e-02|2.2e-01|1.1e+05| 3.367078e+04  1.150808e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.6e-07|2.0e-02|3.0e+04| 2.446771e+04 -6.222195e+01| 0:0:00| chol  1  1
 3|0.975|0.994|3.2e-08|6.0e-03|1.1e+03| 8.708196e+02 -4.034507e+01| 0:0:00| chol  1  1
 4|0.711|0.455|2.6e-07|4.1e-03|9.1e+02| 7.211737e+02 -2.822531e+01| 0:0:00| chol  1  1
 5|0.369|0.737|1.7e-07|1.5e-03|7.1e+02| 6.264803e+02 -2.657340e+01| 0:0:00| chol  2  2
 6|0.449|0.472|1.1e-07|8.5e-04|5.8e+02| 4.990638e+02 -2.288411e+01| 0:0:00| chol  2  2
 7|0.314|0.340|1.0e-07|5.8e-04|5.3e+02| 4.393831e+02 -2.698454e+01| 0:0:00| chol  2  2
 8|0.361|0.773|8.3e-08|1.5e-04|4.4e+02| 3.810138e+02 -3.792185e+01| 0:0:00| chol  2  2
 9|0.679|1.000|3.3e-08|1.2e-05|2.7e+02| 2.264297e+02 -4.220250e+01| 0:0:00| chol  2  2
10|1.000|1.000|2.2e-10|6.0e-06|1.0e+02| 5.981387e+01 -4.160095e+01| 0:0:00| chol  2  2
11|1.000|0.832|2.7e-10|3.5e-06|1.6e+01|-2.437321e+01 -3.957722e+01| 0:0:00| chol  2  2
12|0.966|0.869|2.7e-10|1.8e-06|1.1e+00|-3.807231e+01 -3.898981e+01| 0:0:00| chol  2  2
13|0.958|0.913|4.9e-10|8.4e-07|2.2e-01|-3.886994e+01 -3.900908e+01| 0:0:00| chol  2  2
14|0.979|0.992|7.9e-10|3.8e-07|2.0e-02|-3.906021e+01 -3.904315e+01| 0:0:00| chol  2  2
15|0.943|1.000|9.3e-09|1.9e-07|2.0e-03|-3.907812e+01 -3.906153e+01| 0:0:00| chol  3  3
16|1.000|0.989|7.2e-08|2.3e-09|7.7e-04|-3.907939e+01 -3.907989e+01| 0:0:00| chol  3  3
17|0.957|0.985|2.7e-09|6.6e-11|3.5e-05|-3.908004e+01 -3.908007e+01| 0:0:00| chol  6  7
18|1.000|0.996|2.0e-08|1.2e-11|1.2e-05|-3.908005e+01 -3.908008e+01| 0:0:00| chol 24 30
19|1.000|0.991|2.3e-08|5.5e-13|4.8e-07|-3.908007e+01 -3.908008e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.90800653e+01
```

```
 dual   objective value = -3.90800751e+01
 gap := trace(XZ)       = 4.78e-07
 relative gap           = 6.04e-09
 actual relative gap    = 1.24e-07
 rel. primal infeas     = 2.33e-08
 rel. dual   infeas     = 5.48e-13
 norm(X), norm(y), norm(Z) = 9.9e+03, 9.4e+01, 6.1e+01
 norm(A), norm(b), norm(C) = 2.6e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.13
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 7.3e-08  0.0e+00  7.7e-13  0.0e+00  1.2e-07  6.0e-09
------------------------------------------------------------------

ans =

   39.0801

Epoch... 29
Epoch... 30

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.5e+00|2.0e+06| 3.465401e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.976|0.972|2.4e-02|2.2e-01|1.1e+05| 3.386277e+04  1.182028e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.5e-07|2.0e-02|3.0e+04| 2.470507e+04 -6.279945e+01| 0:0:00| chol  1  1
 3|0.975|0.994|3.2e-08|6.0e-03|1.1e+03| 8.724026e+02 -4.042326e+01| 0:0:00| chol  1  1
 4|0.720|0.444|2.7e-07|4.1e-03|9.1e+02| 7.220005e+02 -2.829691e+01| 0:0:00| chol  1  1
 5|0.364|0.737|1.7e-07|1.5e-03|7.2e+02| 6.283468e+02 -2.673546e+01| 0:0:00| chol  2  1
 6|0.445|0.465|1.1e-07|8.7e-04|5.9e+02| 5.017224e+02 -2.290716e+01| 0:0:00| chol  2  2
 7|0.324|0.341|1.0e-07|5.9e-04|5.3e+02| 4.402440e+02 -2.689940e+01| 0:0:00| chol  2  1
 8|0.358|0.774|8.4e-08|1.5e-04|4.4e+02| 3.832381e+02 -3.786089e+01| 0:0:00| chol  2  2
 9|0.686|1.000|3.3e-08|1.2e-05|2.7e+02| 2.288380e+02 -4.191611e+01| 0:0:00| chol  2  2
10|1.000|1.000|2.0e-10|6.0e-06|1.0e+02| 5.929665e+01 -4.126193e+01| 0:0:00| chol  2  2
11|1.000|0.830|2.6e-10|3.5e-06|1.7e+01|-2.293551e+01 -3.925168e+01| 0:0:00| chol  2  2
12|0.970|0.878|2.4e-10|1.7e-06|1.2e+00|-3.760081e+01 -3.864140e+01| 0:0:00| chol  2  2
13|0.969|0.907|5.7e-10|8.4e-07|1.9e-01|-3.854268e+01 -3.865479e+01| 0:0:00| chol  2  2
14|0.994|1.000|1.4e-09|3.8e-07|3.3e-02|-3.869299e+01 -3.868943e+01| 0:0:00| chol  2  2
15|0.969|0.985|8.1e-09|1.9e-07|1.2e-03|-3.872354e+01 -3.870629e+01| 0:0:00| chol  3  4
16|1.000|0.918|1.7e-07|1.6e-08|5.6e-04|-3.872411e+01 -3.872317e+01| 0:0:00| chol  2  2
17|0.902|0.981|2.2e-08|3.6e-10|6.9e-05|-3.872461e+01 -3.872464e+01| 0:0:00| chol  4  6
18|1.000|0.992|2.6e-08|2.5e-11|2.4e-05|-3.872464e+01 -3.872467e+01| 0:0:00| chol  7  8
19|0.987|0.991|4.2e-09|1.6e-12|1.4e-06|-3.872467e+01 -3.872467e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.87246660e+01
```

```
 dual   objective value = -3.87246658e+01
 gap := trace(XZ)       = 1.41e-06
 relative gap           = 1.80e-08
 actual relative gap    = -2.62e-09
 rel. primal infeas     = 4.21e-09
 rel. dual   infeas     = 1.56e-12
 norm(X), norm(y), norm(Z) = 9.6e+03, 9.3e+01, 6.1e+01
 norm(A), norm(b), norm(C) = 2.7e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 1.3e-08  0.0e+00  2.2e-12  0.0e+00  -2.6e-09  1.8e-08
------------------------------------------------------------------

ans =

   38.7247

Epoch... 31
Epoch... 32

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.5e+00|2.0e+06| 3.488247e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.976|0.974|2.4e-02|2.5e-01|1.2e+05| 3.351862e+04  1.230293e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.1e-07|3.3e-02|3.3e+04| 2.387806e+04 -6.276904e+01| 0:0:00| chol  1  1
 3|0.996|0.995|3.0e-08|1.0e-02|1.1e+03| 7.610248e+02 -3.831481e+01| 0:0:00| chol  1  1
 4|0.834|0.468|2.9e-07|6.7e-03|8.8e+02| 6.539362e+02 -2.675723e+01| 0:0:00| chol  1  1
 5|0.517|0.870|1.4e-07|1.6e-03|6.0e+02| 5.209234e+02 -2.419532e+01| 0:0:00| chol  1  1
 6|0.659|0.511|5.0e-08|9.4e-04|4.3e+02| 3.596611e+02 -2.346757e+01| 0:0:00| chol  2  2
 7|0.684|0.306|1.3e-07|6.8e-04|3.6e+02| 2.670009e+02 -2.528821e+01| 0:0:00| chol  1  2
 8|0.333|0.539|1.1e-07|3.3e-04|3.2e+02| 2.479306e+02 -3.657458e+01| 0:0:00| chol  1  1
 9|0.784|0.734|2.4e-08|1.0e-04|2.0e+02| 1.462378e+02 -3.725104e+01| 0:0:00| chol  1  2
10|1.000|0.957|2.5e-10|1.4e-05|7.0e+01| 2.847952e+01 -3.946528e+01| 0:0:00| chol  2  2
11|0.696|0.905|1.2e-10|5.9e-06|2.8e+01|-1.137989e+01 -3.865346e+01| 0:0:00| chol  2  2
12|0.801|0.989|3.6e-10|2.5e-06|8.9e+00|-2.970039e+01 -3.833035e+01| 0:0:00| chol  2  2
13|0.945|0.952|1.8e-09|1.3e-06|5.1e-01|-3.788590e+01 -3.827166e+01| 0:0:00| chol  2  2
14|1.000|1.000|2.3e-09|6.3e-07|1.4e-01|-3.825296e+01 -3.833122e+01| 0:0:00| chol  2  2
15|0.975|0.985|1.3e-09|3.2e-07|4.3e-03|-3.838160e+01 -3.835604e+01| 0:0:00| chol  3  3
16|1.000|1.000|9.0e-08|1.2e-10|2.1e-03|-3.838381e+01 -3.838589e+01| 0:0:00| chol  3  3
17|0.982|0.988|3.2e-09|4.1e-11|4.1e-05|-3.838579e+01 -3.838583e+01| 0:0:00| chol  7  7
18|1.000|0.992|1.3e-08|4.5e-12|4.3e-06|-3.838583e+01 -3.838583e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -3.83858319e+01
 dual   objective value = -3.83858281e+01
```

```
 gap := trace(XZ)       = 4.28e-06
 relative gap           = 5.50e-08
 actual relative gap    = -4.90e-08
 rel. primal infeas     = 1.33e-08
 rel. dual   infeas     = 4.47e-12
 norm(X), norm(y), norm(Z) = 9.4e+03, 9.3e+01, 6.1e+01
 norm(A), norm(b), norm(C) = 2.7e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 4.1e-08  0.0e+00  6.3e-12  0.0e+00  -4.9e-08  5.5e-08
------------------------------------------------------------------

ans =

   38.3858

Epoch... 33
Epoch... 34

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.5e+00|2.0e+06| 3.502387e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.977|0.974|2.3e-02|2.5e-01|1.2e+05| 3.366206e+04  1.258707e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.1e-07|3.3e-02|3.3e+04| 2.404802e+04 -6.326713e+01| 0:0:00| chol  1  1
 3|0.996|0.995|2.9e-08|1.0e-02|1.1e+03| 7.595163e+02 -3.837360e+01| 0:0:00| chol  1  1
 4|0.845|0.459|2.9e-07|6.8e-03|8.8e+02| 6.538694e+02 -2.679981e+01| 0:0:00| chol  1  1
 5|0.505|0.868|1.5e-07|1.7e-03|6.0e+02| 5.228116e+02 -2.431957e+01| 0:0:00| chol  2  1
 6|0.658|0.515|5.3e-08|9.4e-04|4.3e+02| 3.602351e+02 -2.342883e+01| 0:0:00| chol  2  2
 7|0.673|0.309|1.3e-07|6.8e-04|3.6e+02| 2.682246e+02 -2.525091e+01| 0:0:00| chol  2  2
 8|0.384|0.524|1.0e-07|3.4e-04|3.2e+02| 2.463672e+02 -3.599587e+01| 0:0:00| chol  2  1
 9|0.712|0.702|3.1e-08|1.2e-04|2.1e+02| 1.585959e+02 -3.673460e+01| 0:0:00| chol  2  2
10|1.000|0.996|2.2e-10|1.0e-05|8.2e+01| 4.102041e+01 -3.978828e+01| 0:0:00| chol  2  2
11|0.727|0.921|1.4e-10|5.4e-06|3.1e+01|-7.636834e+00 -3.846186e+01| 0:0:00| chol  2  2
12|0.834|0.988|2.7e-10|2.5e-06|8.9e+00|-2.934823e+01 -3.801231e+01| 0:0:00| chol  2  2
13|0.941|0.948|2.0e-09|1.3e-06|5.4e-01|-3.751878e+01 -3.794195e+01| 0:0:00| chol  2  2
14|1.000|1.000|1.8e-09|6.3e-07|1.6e-01|-3.790122e+01 -3.799943e+01| 0:0:00| chol  2  1
15|0.965|0.989|2.8e-08|3.2e-07|7.5e-03|-3.804474e+01 -3.802319e+01| 0:0:00| chol  3  2
16|1.000|1.000|6.4e-08|1.4e-10|2.9e-03|-3.804925e+01 -3.805218e+01| 0:0:00| chol  3  3
17|0.978|0.987|2.4e-09|7.0e-11|6.9e-05|-3.805203e+01 -3.805209e+01| 0:0:00| chol  6  7
18|1.000|0.993|9.1e-09|1.1e-11|1.1e-05|-3.805209e+01 -3.805209e+01| 0:0:00| chol
  linsysolve: Schur complement matrix not positive definite
  switch to LU factor. lu 30 ^14
19|1.000|0.994|5.3e-08|2.8e-12|2.8e-06|-3.805216e+01 -3.805209e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
```

```
 primal objective value = -3.80521613e+01
 dual   objective value = -3.80520935e+01
 gap := trace(XZ)       = 2.78e-06
 relative gap           = 3.61e-08
 actual relative gap    = -8.78e-07
 rel. primal infeas     = 5.35e-08
 rel. dual   infeas     = 2.82e-12
 norm(X), norm(y), norm(Z) = 9.2e+03, 9.3e+01, 6.1e+01
 norm(A), norm(b), norm(C) = 2.7e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.16
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 1.7e-07  0.0e+00  4.0e-12  0.0e+00  -8.8e-07  3.6e-08
------------------------------------------------------------------

ans =

   38.0521

Epoch... 35
Epoch... 36

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.6e+00|2.0e+06| 3.533267e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.977|0.974|2.3e-02|2.5e-01|1.2e+05| 3.396213e+04  1.283029e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.0e-07|3.3e-02|3.3e+04| 2.429397e+04 -6.392545e+01| 0:0:00| chol  1  1
 3|0.996|0.995|2.9e-08|1.0e-02|1.1e+03| 7.598082e+02 -3.850439e+01| 0:0:00| chol  1  1
 4|0.857|0.449|3.0e-07|6.8e-03|8.9e+02| 6.556135e+02 -2.687613e+01| 0:0:00| chol  1  1
 5|0.493|0.868|1.5e-07|1.7e-03|6.0e+02| 5.256884e+02 -2.446606e+01| 0:0:00| chol  2  1
 6|0.656|0.519|5.6e-08|9.5e-04|4.4e+02| 3.618614e+02 -2.340082e+01| 0:0:00| chol  2  2
 7|0.658|0.311|1.2e-07|6.8e-04|3.6e+02| 2.707931e+02 -2.522291e+01| 0:0:00| chol  2  2
 8|0.442|0.516|9.7e-08|3.5e-04|3.2e+02| 2.448626e+02 -3.548145e+01| 0:0:00| chol  2  1
 9|0.646|0.674|3.5e-08|1.3e-04|2.2e+02| 1.685458e+02 -3.626751e+01| 0:0:00| chol  1  2
10|1.000|1.000|2.4e-10|1.0e-05|9.4e+01| 5.234197e+01 -4.001145e+01| 0:0:00| chol  2  2
11|0.962|0.941|1.4e-10|5.3e-06|2.0e+01|-1.901417e+01 -3.806991e+01| 0:0:00| chol  2  2
12|0.857|0.964|4.7e-10|2.6e-06|4.1e+00|-3.369522e+01 -3.757935e+01| 0:0:00| chol  2  2
13|0.908|0.979|1.2e-09|1.3e-06|4.1e-01|-3.732451e+01 -3.761836e+01| 0:0:00| chol  2  2
14|1.000|1.000|5.1e-09|6.3e-07|2.0e-01|-3.753488e+01 -3.767877e+01| 0:0:00| chol  2  2
15|0.957|0.979|1.1e-09|3.2e-07|1.1e-02|-3.771795e+01 -3.770034e+01| 0:0:00| chol  2  2
16|1.000|1.000|5.9e-08|1.6e-07|1.5e-03|-3.772731e+01 -3.771479e+01| 0:0:00| chol  3  3
17|1.000|0.993|5.8e-08|1.3e-09|2.0e-04|-3.772858e+01 -3.772867e+01| 0:0:00| chol  3  3
18|0.996|0.990|1.2e-09|1.7e-11|3.6e-06|-3.772876e+01 -3.772876e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -3.77287584e+01
```

```
 dual   objective value = -3.77287612e+01
 gap := trace(XZ)       = 3.65e-06
 relative gap           = 4.77e-08
 actual relative gap    = 3.62e-08
 rel. primal infeas     = 1.21e-09
 rel. dual   infeas     = 1.67e-11
 norm(X), norm(y), norm(Z) = 9.0e+03, 9.3e+01, 6.1e+01
 norm(A), norm(b), norm(C) = 2.7e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.8e-09  0.0e+00  2.3e-11  0.0e+00  3.6e-08  4.8e-08
------------------------------------------------------------------

ans =

   37.7288

Epoch... 37
Epoch... 38

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.6e+00|2.0e+06| 3.551078e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.977|0.974|2.3e-02|2.5e-01|1.2e+05| 3.413940e+04  1.313128e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.0e-07|3.3e-02|3.4e+04| 2.450419e+04 -6.451807e+01| 0:0:00| chol  1  1
 3|0.997|0.995|2.9e-08|1.0e-02|1.1e+03| 7.597185e+02 -3.860944e+01| 0:0:00| chol  1  1
 4|0.868|0.441|3.1e-07|6.9e-03|8.9e+02| 6.568373e+02 -2.694367e+01| 0:0:00| chol  1  1
 5|0.484|0.867|1.6e-07|1.7e-03|6.0e+02| 5.277819e+02 -2.463100e+01| 0:0:00| chol  1  1
 6|0.653|0.523|5.9e-08|9.5e-04|4.4e+02| 3.631926e+02 -2.336400e+01| 0:0:00| chol  2  2
 7|0.640|0.312|1.2e-07|6.8e-04|3.7e+02| 2.737909e+02 -2.518962e+01| 0:0:00| chol  2  2
 8|0.492|0.495|9.3e-08|3.5e-04|3.2e+02| 2.447381e+02 -3.512764e+01| 0:0:00| chol  2  1
 9|0.578|0.639|4.0e-08|1.4e-04|2.4e+02| 1.795313e+02 -3.597043e+01| 0:0:00| chol  1  2
10|1.000|1.000|2.9e-10|6.0e-06|1.1e+02| 6.469456e+01 -4.052944e+01| 0:0:00| chol  2  2
11|1.000|0.952|2.3e-10|3.1e-06|2.1e+01|-1.763101e+01 -3.783876e+01| 0:0:00| chol  2  2
12|0.911|0.948|3.2e-10|1.6e-06|2.9e+00|-3.460896e+01 -3.734977e+01| 0:0:00| chol  2  2
13|0.894|0.929|1.5e-09|8.1e-07|3.5e-01|-3.707528e+01 -3.735734e+01| 0:0:00| chol  2  2
14|1.000|1.000|2.8e-09|3.8e-07|1.6e-01|-3.727131e+01 -3.739375e+01| 0:0:00| chol  2  2
15|0.959|0.973|6.5e-10|1.9e-07|7.7e-03|-3.741427e+01 -3.740509e+01| 0:0:00| chol  2  2
16|1.000|1.000|4.0e-08|9.4e-08|8.3e-04|-3.742100e+01 -3.741361e+01| 0:0:00| chol  3  3
17|1.000|1.000|5.8e-08|1.7e-10|1.7e-04|-3.742165e+01 -3.742181e+01| 0:0:00| chol  4  4
18|0.997|0.990|8.5e-10|5.9e-12|4.1e-06|-3.742180e+01 -3.742180e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -3.74217994e+01
 dual   objective value = -3.74218029e+01
```

```
 gap := trace(XZ)       = 4.07e-06
 relative gap           = 5.36e-08
 actual relative gap    = 4.61e-08
 rel. primal infeas     = 8.51e-10
 rel. dual   infeas     = 5.89e-12
 norm(X), norm(y), norm(Z) = 8.7e+03, 9.3e+01, 6.0e+01
 norm(A), norm(b), norm(C) = 2.7e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.09
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 2.6e-09  0.0e+00  8.3e-12  0.0e+00  4.6e-08  5.4e-08
------------------------------------------------------------------

ans =

   37.4218

Epoch... 39
Epoch... 40

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.6e+00|2.1e+06| 3.566970e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.977|0.974|2.3e-02|2.5e-01|1.2e+05| 3.429884e+04  1.339554e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.0e-07|3.3e-02|3.4e+04| 2.468365e+04 -6.504020e+01| 0:0:00| chol  1  1
 3|0.997|0.995|2.8e-08|1.0e-02|1.1e+03| 7.592009e+02 -3.869220e+01| 0:0:00| chol  1  1
 4|0.878|0.433|3.1e-07|7.0e-03|8.9e+02| 6.576797e+02 -2.699845e+01| 0:0:00| chol  1  1
 5|0.476|0.866|1.6e-07|1.7e-03|6.1e+02| 5.291651e+02 -2.479015e+01| 0:0:00| chol  2  1
 6|0.650|0.528|6.1e-08|9.5e-04|4.4e+02| 3.641991e+02 -2.332048e+01| 0:0:00| chol  2  2
 7|0.621|0.313|1.1e-07|6.8e-04|3.7e+02| 2.766956e+02 -2.514793e+01| 0:0:00| chol  2  2
 8|0.560|0.492|8.7e-08|3.5e-04|3.2e+02| 2.418270e+02 -3.465400e+01| 0:0:00| chol  1  1
 9|0.524|0.617|4.2e-08|1.4e-04|2.4e+02| 1.854496e+02 -3.555022e+01| 0:0:00| chol  2  2
10|1.000|1.000|3.4e-10|6.0e-06|1.1e+02| 7.236893e+01 -4.063565e+01| 0:0:00| chol  2  2
11|1.000|0.970|2.7e-10|3.1e-06|2.3e+01|-1.499706e+01 -3.741574e+01| 0:0:00| chol  2  2
12|0.920|0.953|3.5e-10|1.6e-06|3.0e+00|-3.416966e+01 -3.706004e+01| 0:0:00| chol  2  2
13|0.877|0.940|1.5e-09|8.0e-07|4.8e-01|-3.665659e+01 -3.706557e+01| 0:0:00| chol  2  2
14|1.000|1.000|1.9e-09|3.8e-07|2.3e-01|-3.690603e+01 -3.710084e+01| 0:0:00| chol  2  2
15|0.957|0.970|3.8e-10|1.9e-07|1.2e-02|-3.711470e+01 -3.710964e+01| 0:0:00| chol  2  2
16|1.000|1.000|1.6e-08|9.4e-08|1.2e-03|-3.712480e+01 -3.711793e+01| 0:0:00| chol  3  3
17|1.000|0.996|6.2e-08|4.4e-10|1.4e-04|-3.712578e+01 -3.712591e+01| 0:0:00| chol  3  3
18|0.996|0.991|1.6e-09|7.2e-12|2.9e-06|-3.712593e+01 -3.712593e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -3.71259298e+01
 dual   objective value = -3.71259318e+01
 gap := trace(XZ)       = 2.93e-06
```

```
 relative gap           = 3.89e-08
 actual relative gap    = 2.60e-08
 rel. primal infeas     = 1.60e-09
 rel. dual   infeas     = 7.17e-12
 norm(X), norm(y), norm(Z) = 8.5e+03, 9.3e+01, 6.0e+01
 norm(A), norm(b), norm(C) = 2.7e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 5.0e-09  0.0e+00  1.0e-11  0.0e+00  2.6e-08  3.9e-08
------------------------------------------------------------------

ans =

   37.1259

Epoch... 41
Epoch... 42

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.6e+00|2.1e+06| 3.589898e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.977|0.974|2.3e-02|2.5e-01|1.2e+05| 3.452432e+04  1.366851e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.0e-07|3.3e-02|3.4e+04| 2.485995e+04 -6.552850e+01| 0:0:00| chol  1  1
 3|0.997|0.995|2.8e-08|1.0e-02|1.1e+03| 7.598822e+02 -3.875811e+01| 0:0:00| chol  1  1
 4|0.887|0.426|3.2e-07|7.0e-03|9.0e+02| 6.594022e+02 -2.704031e+01| 0:0:00| chol  1  1
 5|0.469|0.865|1.7e-07|1.7e-03|6.1e+02| 5.312019e+02 -2.495629e+01| 0:0:00| chol  1  1
 6|0.645|0.531|6.4e-08|9.5e-04|4.4e+02| 3.659701e+02 -2.326105e+01| 0:0:00| chol  2  2
 7|0.602|0.312|1.1e-07|6.8e-04|3.7e+02| 2.803432e+02 -2.509401e+01| 0:0:00| chol  2  2
 8|0.628|0.490|8.1e-08|3.6e-04|3.1e+02| 2.391481e+02 -3.422051e+01| 0:0:00| chol  2  1
 9|0.476|0.598|4.3e-08|1.5e-04|2.5e+02| 1.900682e+02 -3.518147e+01| 0:0:00| chol  2  2
10|1.000|1.000|4.0e-10|6.0e-06|1.2e+02| 7.811127e+01 -4.067256e+01| 0:0:00| chol  2  2
11|0.975|0.825|3.0e-10|3.5e-06|2.6e+01|-1.243793e+01 -3.756200e+01| 0:0:00| chol  2  2
12|1.000|0.916|1.9e-10|1.7e-06|3.3e+00|-3.367182e+01 -3.685823e+01| 0:0:00| chol  2  2
13|0.936|0.918|3.7e-10|8.3e-07|2.8e-01|-3.657607e+01 -3.678299e+01| 0:0:00| chol  2  2
14|1.000|0.990|1.5e-09|3.8e-07|1.1e-01|-3.673341e+01 -3.681090e+01| 0:0:00| chol  2  2
15|0.958|1.000|7.1e-10|1.9e-07|1.5e-02|-3.682499e+01 -3.682390e+01| 0:0:00| chol  2  2
16|1.000|1.000|1.1e-08|9.4e-08|1.7e-03|-3.683760e+01 -3.683146e+01| 0:0:00| chol  3  2
17|0.998|1.000|9.9e-08|2.0e-10|4.1e-04|-3.683891e+01 -3.683928e+01| 0:0:00| chol  4  4
18|0.974|0.980|2.4e-09|2.6e-11|2.0e-05|-3.683925e+01 -3.683927e+01| 0:0:00| chol  9  7
19|1.000|0.990|7.9e-10|4.9e-12|4.3e-06|-3.683927e+01 -3.683927e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.68392680e+01
 dual   objective value = -3.68392718e+01
 gap := trace(XZ)       = 4.30e-06
```

```
 relative gap           = 5.76e-08
 actual relative gap    = 5.07e-08
 rel. primal infeas     = 7.94e-10
 rel. dual   infeas     = 4.93e-12
 norm(X), norm(y), norm(Z) = 8.4e+03, 9.3e+01, 6.0e+01
 norm(A), norm(b), norm(C) = 2.7e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.13
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 2.5e-09  0.0e+00  6.9e-12  0.0e+00  5.1e-08  5.8e-08
------------------------------------------------------------------

ans =

   36.8393

Epoch... 43
Epoch... 44

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.7e+00|2.1e+06| 3.604723e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.977|0.974|2.3e-02|2.5e-01|1.2e+05| 3.467350e+04  1.393779e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.0e-07|3.3e-02|3.4e+04| 2.502949e+04 -6.601833e+01| 0:0:00| chol  1  1
 3|0.997|0.995|2.8e-08|1.0e-02|1.2e+03| 7.613016e+02 -3.883007e+01| 0:0:00| chol  1  1
 4|0.896|0.421|3.2e-07|7.1e-03|9.0e+02| 6.613285e+02 -2.708562e+01| 0:0:00| chol  1  1
 5|0.463|0.864|1.7e-07|1.7e-03|6.1e+02| 5.343324e+02 -2.511778e+01| 0:0:00| chol  1  2
 6|0.642|0.535|6.6e-08|9.5e-04|4.4e+02| 3.684172e+02 -2.322136e+01| 0:0:00| chol  2  2
 7|0.590|0.312|1.0e-07|6.8e-04|3.7e+02| 2.837866e+02 -2.506133e+01| 0:0:00| chol  1  2
 8|0.690|0.490|7.7e-08|3.6e-04|3.1e+02| 2.367182e+02 -3.392407e+01| 0:0:00| chol  1  1
 9|0.444|0.587|4.4e-08|1.5e-04|2.5e+02| 1.924744e+02 -3.493373e+01| 0:0:00| chol  2  2
10|1.000|1.000|3.6e-10|6.0e-06|1.2e+02| 8.128050e+01 -4.060492e+01| 0:0:00| chol  2  2
11|0.933|0.698|3.0e-10|3.9e-06|2.5e+01|-1.286536e+01 -3.764067e+01| 0:0:00| chol  2  2
12|1.000|0.919|1.4e-10|1.7e-06|4.6e+00|-3.220618e+01 -3.663444e+01| 0:0:00| chol  2  2
13|0.947|0.935|3.8e-10|8.1e-07|3.3e-01|-3.624686e+01 -3.650524e+01| 0:0:00| chol  2  2
14|1.000|0.907|1.6e-09|4.2e-07|1.1e-01|-3.645340e+01 -3.652708e+01| 0:0:00| chol  2  2
15|1.000|1.000|7.7e-10|1.9e-07|2.7e-02|-3.653065e+01 -3.654241e+01| 0:0:00| chol  2  2
16|1.000|0.960|6.1e-09|9.8e-08|1.1e-03|-3.655593e+01 -3.654898e+01| 0:0:00| chol  3  3
17|1.000|0.984|1.9e-08|1.7e-09|1.6e-04|-3.655675e+01 -3.655680e+01| 0:0:00| chol  3  3
18|1.000|0.990|9.9e-10|2.0e-11|3.2e-06|-3.655692e+01 -3.655692e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -3.65569179e+01
 dual   objective value = -3.65569198e+01
 gap := trace(XZ)       = 3.20e-06
 relative gap           = 4.32e-08
```

```
 actual relative gap    = 2.53e-08
 rel. primal infeas     = 9.95e-10
 rel. dual   infeas     = 1.95e-11
 norm(X), norm(y), norm(Z) = 8.2e+03, 9.3e+01, 6.0e+01
 norm(A), norm(b), norm(C) = 2.8e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.08
 CPU time per iteration = 0.00
 termination code       =  0
 DIMACS errors: 3.1e-09  0.0e+00  2.7e-11  0.0e+00  2.5e-08  4.3e-08
------------------------------------------------------------------

ans =

   36.5569

Epoch... 45
Epoch... 46

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.7e+00|2.1e+06| 3.630573e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.978|0.974|2.2e-02|2.5e-01|1.2e+05| 3.492631e+04  1.415120e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.0e-07|3.3e-02|3.5e+04| 2.520174e+04 -6.649638e+01| 0:0:00| chol  1  1
 3|0.997|0.995|2.8e-08|1.0e-02|1.2e+03| 7.630006e+02 -3.889280e+01| 0:0:00| chol  1  1
 4|0.904|0.415|3.2e-07|7.1e-03|9.1e+02| 6.636966e+02 -2.711916e+01| 0:0:00| chol  1  1
 5|0.458|0.862|1.8e-07|1.7e-03|6.2e+02| 5.379694e+02 -2.527399e+01| 0:0:00| chol  1  1
 6|0.637|0.538|6.8e-08|9.5e-04|4.4e+02| 3.714763e+02 -2.317130e+01| 0:0:00| chol  2  2
 7|0.578|0.312|1.0e-07|6.8e-04|3.8e+02| 2.875810e+02 -2.502533e+01| 0:0:00| chol  2  2
 8|0.743|0.489|7.4e-08|3.6e-04|3.1e+02| 2.350676e+02 -3.367940e+01| 0:0:00| chol  2  1
 9|0.419|0.579|4.3e-08|1.6e-04|2.5e+02| 1.944200e+02 -3.474012e+01| 0:0:00| chol  2  2
10|1.000|1.000|5.9e-10|6.0e-06|1.2e+02| 8.335223e+01 -4.049024e+01| 0:0:00| chol  2  2
11|0.905|0.647|2.2e-10|4.1e-06|2.5e+01|-1.337643e+01 -3.751061e+01| 0:0:00| chol  2  2
12|0.964|0.921|1.7e-10|1.7e-06|5.6e+00|-3.091934e+01 -3.639399e+01| 0:0:00| chol  2  2
13|0.952|0.938|2.7e-10|8.1e-07|3.7e-01|-3.593448e+01 -3.623668e+01| 0:0:00| chol  2  2
14|0.995|0.878|1.4e-09|4.3e-07|9.5e-02|-3.619402e+01 -3.625465e+01| 0:0:00| chol  2  2
15|1.000|1.000|1.4e-09|1.9e-07|3.5e-02|-3.625069e+01 -3.627065e+01| 0:0:00| chol  2  2
16|0.968|0.942|3.5e-09|9.9e-08|2.7e-03|-3.628204e+01 -3.627673e+01| 0:0:00| chol  3  2
17|1.000|1.000|7.9e-08|1.7e-10|5.8e-04|-3.628405e+01 -3.628462e+01| 0:0:00| chol  3  3
18|0.988|0.989|5.2e-10|1.1e-11|7.6e-06|-3.628460e+01 -3.628460e+01| 0:0:00| chol 26 17
19|1.000|0.990|1.2e-09|2.7e-13|1.5e-07|-3.628460e+01 -3.628460e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.62846032e+01
 dual   objective value = -3.62846030e+01
 gap := trace(XZ)       = 1.46e-07
 relative gap           = 1.98e-09
```

```
 actual relative gap    = -2.77e-09
 rel. primal infeas     = 1.22e-09
 rel. dual   infeas     = 2.71e-13
 norm(X), norm(y), norm(Z) = 8.0e+03, 9.3e+01, 6.0e+01
 norm(A), norm(b), norm(C) = 2.8e+02, 1.1e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.8e-09  0.0e+00  3.8e-13  0.0e+00  -2.8e-09  2.0e-09
------------------------------------------------------------------

ans =

   36.2846

Epoch... 47
Epoch... 48

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.7e+00|2.1e+06| 3.640516e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.978|0.974|2.2e-02|2.5e-01|1.2e+05| 3.502928e+04  1.438168e+01| 0:0:00| chol  1  1
 2|1.000|1.000|3.0e-07|3.3e-02|3.5e+04| 2.534648e+04 -6.697827e+01| 0:0:00| chol  1  1
 3|0.997|0.994|2.9e-08|1.0e-02|1.2e+03| 7.642899e+02 -3.897615e+01| 0:0:00| chol  1  1
 4|0.912|0.410|3.3e-07|7.1e-03|9.1e+02| 6.654660e+02 -2.717436e+01| 0:0:00| chol  1  1
 5|0.454|0.861|1.8e-07|1.8e-03|6.2e+02| 5.407105e+02 -2.544473e+01| 0:0:00| chol  1  1
 6|0.633|0.541|7.1e-08|9.5e-04|4.5e+02| 3.742253e+02 -2.314247e+01| 0:0:00| chol  2  2
 7|0.569|0.312|1.0e-07|6.8e-04|3.8e+02| 2.910578e+02 -2.500787e+01| 0:0:00| chol  2  2
 8|0.779|0.490|7.2e-08|3.6e-04|3.1e+02| 2.343366e+02 -3.348210e+01| 0:0:00| chol  2  1
 9|0.401|0.575|4.4e-08|1.6e-04|2.6e+02| 1.961207e+02 -3.459055e+01| 0:0:00| chol  2  2
10|1.000|1.000|3.7e-10|6.0e-06|1.3e+02| 8.456595e+01 -4.033219e+01| 0:0:00| chol  2  2
11|0.887|0.630|2.4e-10|4.1e-06|2.4e+01|-1.364162e+01 -3.728554e+01| 0:0:00| chol  2  2
12|0.930|0.917|8.3e-11|1.7e-06|6.4e+00|-2.988026e+01 -3.616663e+01| 0:0:00| chol  2  2
13|0.954|0.937|4.4e-10|8.1e-07|4.0e-01|-3.564055e+01 -3.597784e+01| 0:0:00| chol  2  2
14|0.971|0.870|1.4e-09|4.3e-07|9.0e-02|-3.593597e+01 -3.599219e+01| 0:0:00| chol  2  2
15|1.000|1.000|1.6e-09|1.9e-07|3.4e-02|-3.598822e+01 -3.600793e+01| 0:0:00| chol  2  2
16|1.000|1.000|2.7e-09|9.4e-08|6.1e-03|-3.601564e+01 -3.601438e+01| 0:0:00| chol  2  2
17|1.000|1.000|1.2e-08|8.4e-11|1.2e-03|-3.602046e+01 -3.602162e+01| 0:0:00| chol  4  5
18|1.000|1.000|9.3e-09|1.3e-10|1.4e-04|-3.602146e+01 -3.602159e+01| 0:0:00| chol  3  3
19|1.000|0.991|3.6e-10|4.1e-12|2.5e-06|-3.602158e+01 -3.602158e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.60215826e+01
 dual   objective value = -3.60215846e+01
 gap := trace(XZ)       = 2.53e-06
 relative gap           = 3.46e-08
```

```
 actual relative gap    = 2.75e-08
 rel. primal infeas     = 3.57e-10
 rel. dual   infeas     = 4.06e-12
 norm(X), norm(y), norm(Z) = 7.9e+03, 9.2e+01, 6.0e+01
 norm(A), norm(b), norm(C) = 2.8e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 1.1e-09  0.0e+00  5.7e-12  0.0e+00  2.7e-08  3.5e-08
------------------------------------------------------------------

ans =

   36.0216

Epoch... 49
Epoch... 50

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.7e+00|2.2e+06| 3.656396e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.978|0.974|2.2e-02|2.5e-01|1.3e+05| 3.518847e+04  1.459595e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.9e-07|3.3e-02|3.5e+04| 2.549322e+04 -6.742099e+01| 0:0:00| chol  1  1
 3|0.998|0.994|2.9e-08|1.0e-02|1.2e+03| 7.655385e+02 -3.904740e+01| 0:0:00| chol  1  1
 4|0.919|0.405|3.3e-07|7.2e-03|9.1e+02| 6.673563e+02 -2.721937e+01| 0:0:00| chol  1  1
 5|0.450|0.860|1.8e-07|1.8e-03|6.2e+02| 5.433745e+02 -2.559936e+01| 0:0:00| chol  1  2
 6|0.628|0.543|7.3e-08|9.5e-04|4.5e+02| 3.771665e+02 -2.311024e+01| 0:0:00| chol  2  2
 7|0.561|0.312|9.9e-08|6.8e-04|3.8e+02| 2.944589e+02 -2.499232e+01| 0:0:00| chol  2  1
 8|0.801|0.490|7.1e-08|3.6e-04|3.1e+02| 2.347764e+02 -3.333142e+01| 0:0:00| chol  2  1
 9|0.390|0.574|4.4e-08|1.6e-04|2.6e+02| 1.979737e+02 -3.447660e+01| 0:0:00| chol  2  2
10|1.000|1.000|3.4e-10|6.0e-06|1.3e+02| 8.539399e+01 -4.015496e+01| 0:0:00| chol  2  2
11|0.877|0.636|3.3e-10|4.1e-06|2.4e+01|-1.298766e+01 -3.700613e+01| 0:0:00| chol  2  2
12|0.890|0.916|1.9e-10|1.7e-06|7.3e+00|-2.875534e+01 -3.594403e+01| 0:0:00| chol  2  2
13|0.956|0.938|3.5e-10|8.1e-07|4.4e-01|-3.534956e+01 -3.572725e+01| 0:0:00| chol  2  2
14|0.946|0.865|1.2e-09|4.3e-07|8.7e-02|-3.568518e+01 -3.573858e+01| 0:0:00| chol  2  2
15|0.991|1.000|1.1e-09|1.9e-07|3.4e-02|-3.573408e+01 -3.575404e+01| 0:0:00| chol  2  2
16|1.000|1.000|8.1e-09|9.4e-08|1.2e-02|-3.575595e+01 -3.576051e+01| 0:0:00| chol  2  2
17|0.901|0.935|7.1e-09|5.0e-08|1.6e-03|-3.576584e+01 -3.576356e+01| 0:0:00| chol  3  3
18|1.000|1.000|1.2e-08|2.9e-10|7.7e-04|-3.576665e+01 -3.576740e+01| 0:0:00| chol  4  4
19|0.917|0.908|1.8e-09|1.2e-10|8.3e-05|-3.576730e+01 -3.576737e+01| 0:0:00| chol  5  6
20|1.000|0.991|4.4e-09|4.0e-11|3.3e-05|-3.576734e+01 -3.576737e+01| 0:0:00| chol  8  8
21|1.000|0.994|6.2e-09|7.6e-12|6.3e-06|-3.576737e+01 -3.576737e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 21
 primal objective value = -3.57673652e+01
 dual   objective value = -3.57673718e+01
```

```
 gap := trace(XZ)       = 6.27e-06
 relative gap           = 8.64e-08
 actual relative gap    = 9.07e-08
 rel. primal infeas     = 6.25e-09
 rel. dual   infeas     = 7.62e-12
 norm(X), norm(y), norm(Z) = 7.7e+03, 9.2e+01, 6.0e+01
 norm(A), norm(b), norm(C) = 2.8e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.13
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 1.9e-08  0.0e+00  1.1e-11  0.0e+00  9.1e-08  8.6e-08
------------------------------------------------------------------

ans =

   35.7674

Epoch... 51
Epoch... 52

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.8e+00|2.2e+06| 3.669741e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.978|0.974|2.2e-02|2.5e-01|1.3e+05| 3.532378e+04  1.483056e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.9e-07|3.3e-02|3.5e+04| 2.564840e+04 -6.787650e+01| 0:0:00| chol  1  1
 3|0.998|0.994|2.9e-08|1.0e-02|1.2e+03| 7.668776e+02 -3.912924e+01| 0:0:00| chol  1  1
 4|0.925|0.401|3.3e-07|7.2e-03|9.2e+02| 6.693114e+02 -2.727000e+01| 0:0:00| chol  1  1
 5|0.447|0.860|1.9e-07|1.8e-03|6.3e+02| 5.458610e+02 -2.574972e+01| 0:0:00| chol  2  2
 6|0.623|0.545|7.5e-08|9.5e-04|4.5e+02| 3.799946e+02 -2.308412e+01| 0:0:00| chol  2  2
 7|0.554|0.311|9.8e-08|6.8e-04|3.8e+02| 2.976821e+02 -2.498141e+01| 0:0:00| chol  2  1
 8|0.810|0.491|6.9e-08|3.6e-04|3.1e+02| 2.361418e+02 -3.320420e+01| 0:0:00| chol  2  1
 9|0.382|0.574|4.3e-08|1.6e-04|2.6e+02| 2.000739e+02 -3.437955e+01| 0:0:00| chol  2  2
10|1.000|1.000|2.9e-10|6.0e-06|1.3e+02| 8.600578e+01 -3.995942e+01| 0:0:00| chol  2  2
11|0.871|0.652|3.3e-10|4.1e-06|2.5e+01|-1.174094e+01 -3.670786e+01| 0:0:00| chol  2  2
12|0.848|0.917|1.2e-10|1.7e-06|8.4e+00|-2.748726e+01 -3.572201e+01| 0:0:00| chol  2  2
13|0.961|0.943|3.7e-10|8.1e-07|4.8e-01|-3.505775e+01 -3.547994e+01| 0:0:00| chol  2  2
14|0.924|0.861|1.1e-09|4.4e-07|8.5e-02|-3.543698e+01 -3.548871e+01| 0:0:00| chol  2  2
15|0.949|1.000|1.0e-09|1.9e-07|3.6e-02|-3.548203e+01 -3.550393e+01| 0:0:00| chol  2  2
16|1.000|1.000|2.9e-09|9.4e-08|1.2e-02|-3.550559e+01 -3.551024e+01| 0:0:00| chol  2  2
17|0.924|0.932|5.3e-09|5.0e-08|1.1e-03|-3.551588e+01 -3.551319e+01| 0:0:00| chol  3  3
18|1.000|1.000|1.9e-08|1.9e-10|3.3e-04|-3.551664e+01 -3.551696e+01| 0:0:00| chol  4  4
19|0.987|0.986|8.2e-10|8.2e-12|4.7e-06|-3.551694e+01 -3.551695e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.55169416e+01
 dual   objective value = -3.55169456e+01
```

```
 gap := trace(XZ)       = 4.66e-06
 relative gap           = 6.47e-08
 actual relative gap    = 5.59e-08
 rel. primal infeas     = 8.20e-10
 rel. dual   infeas     = 8.18e-12
 norm(X), norm(y), norm(Z) = 7.5e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.8e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.09
 CPU time per iteration = 0.00
 termination code       =  0
 DIMACS errors: 2.5e-09  0.0e+00  1.1e-11  0.0e+00  5.6e-08  6.5e-08
------------------------------------------------------------------

ans =

   35.5169

Epoch... 53
Epoch... 54

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.8e+00|2.2e+06| 3.678514e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.978|0.974|2.2e-02|2.6e-01|1.3e+05| 3.541662e+04  1.505883e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.9e-07|3.3e-02|3.5e+04| 2.577809e+04 -6.823728e+01| 0:0:00| chol  1  1
 3|0.998|0.994|2.9e-08|1.0e-02|1.2e+03| 7.676975e+02 -3.917180e+01| 0:0:00| chol  1  1
 4|0.930|0.398|3.4e-07|7.2e-03|9.2e+02| 6.707389e+02 -2.729468e+01| 0:0:00| chol  1  1
 5|0.445|0.859|1.9e-07|1.8e-03|6.3e+02| 5.476949e+02 -2.585889e+01| 0:0:00| chol  2  2
 6|0.617|0.547|7.7e-08|9.5e-04|4.6e+02| 3.826921e+02 -2.304611e+01| 0:0:00| chol  2  2
 7|0.549|0.311|9.8e-08|6.8e-04|3.9e+02| 3.006528e+02 -2.496894e+01| 0:0:00| chol  2  2
 8|0.808|0.492|6.9e-08|3.6e-04|3.1e+02| 2.382837e+02 -3.310950e+01| 0:0:00| chol  2  1
 9|0.380|0.575|4.3e-08|1.6e-04|2.6e+02| 2.023023e+02 -3.429425e+01| 0:0:00| chol  2  2
10|1.000|1.000|3.2e-10|6.0e-06|1.3e+02| 8.666123e+01 -3.976829e+01| 0:0:00| chol  2  2
11|0.866|0.667|2.5e-10|4.0e-06|2.6e+01|-1.055708e+01 -3.641879e+01| 0:0:00| chol  2  2
12|0.809|0.920|7.3e-11|1.7e-06|9.5e+00|-2.618770e+01 -3.550904e+01| 0:0:00| chol  2  2
13|0.966|0.951|4.0e-10|8.0e-07|5.3e-01|-3.476989e+01 -3.524096e+01| 0:0:00| chol  2  2
14|0.909|0.863|1.1e-09|4.3e-07|8.9e-02|-3.519140e+01 -3.524785e+01| 0:0:00| chol  2  2
15|0.949|1.000|1.1e-09|1.9e-07|3.8e-02|-3.523824e+01 -3.526272e+01| 0:0:00| chol  2  2
16|1.000|1.000|4.2e-09|9.4e-08|1.2e-02|-3.526423e+01 -3.526880e+01| 0:0:00| chol  2  2
17|0.931|0.936|3.0e-09|5.0e-08|9.7e-04|-3.527445e+01 -3.527171e+01| 0:0:00| chol  3  3
18|1.000|1.000|1.6e-08|1.1e-10|2.5e-04|-3.527515e+01 -3.527539e+01| 0:0:00| chol  4  4
19|1.000|0.993|7.8e-10|6.4e-12|4.6e-06|-3.527538e+01 -3.527538e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.52753769e+01
 dual   objective value = -3.52753811e+01
```

```
 gap := trace(XZ)       = 4.56e-06
 relative gap           = 6.37e-08
 actual relative gap    = 5.92e-08
 rel. primal infeas     = 7.81e-10
 rel. dual   infeas     = 6.35e-12
 norm(X), norm(y), norm(Z) = 7.4e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.8e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.16
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 2.4e-09  0.0e+00  8.9e-12  0.0e+00  5.9e-08  6.4e-08
------------------------------------------------------------------

ans =

   35.2754

Epoch... 55
Epoch... 56

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.8e+00|2.2e+06| 3.687589e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.978|0.974|2.2e-02|2.6e-01|1.3e+05| 3.551198e+04  1.526126e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.9e-07|3.3e-02|3.6e+04| 2.588984e+04 -6.857548e+01| 0:0:00| chol  1  1
 3|0.998|0.994|3.0e-08|1.0e-02|1.2e+03| 7.682813e+02 -3.920843e+01| 0:0:00| chol  1  1
 4|0.935|0.394|3.4e-07|7.2e-03|9.2e+02| 6.719710e+02 -2.731771e+01| 0:0:00| chol  1  1
 5|0.443|0.859|1.9e-07|1.8e-03|6.3e+02| 5.492407e+02 -2.597016e+01| 0:0:00| chol  2  2
 6|0.612|0.548|7.9e-08|9.5e-04|4.6e+02| 3.850641e+02 -2.301044e+01| 0:0:00| chol  2  2
 7|0.543|0.311|9.7e-08|6.8e-04|3.9e+02| 3.034039e+02 -2.495394e+01| 0:0:00| chol  2  2
 8|0.797|0.493|6.8e-08|3.6e-04|3.2e+02| 2.411014e+02 -3.301198e+01| 0:0:00| chol  1  1
 9|0.379|0.577|4.3e-08|1.6e-04|2.6e+02| 2.048922e+02 -3.420831e+01| 0:0:00| chol  2  2
10|1.000|1.000|1.9e-10|6.0e-06|1.3e+02| 8.727278e+01 -3.957355e+01| 0:0:00| chol  2  2
11|0.861|0.682|3.8e-10|4.0e-06|2.7e+01|-9.405768e+00 -3.613699e+01| 0:0:00| chol  2  2
12|0.771|0.924|1.4e-10|1.7e-06|1.1e+01|-2.486800e+01 -3.530677e+01| 0:0:00| chol  2  2
13|0.973|0.963|4.1e-10|7.9e-07|5.7e-01|-3.449869e+01 -3.501080e+01| 0:0:00| chol  2  2
14|0.897|0.870|1.1e-09|4.3e-07|9.4e-02|-3.495433e+01 -3.501659e+01| 0:0:00| chol  2  2
15|0.982|1.000|1.3e-09|1.9e-07|3.9e-02|-3.500539e+01 -3.503116e+01| 0:0:00| chol  2  2
16|1.000|1.000|2.0e-09|9.4e-08|1.1e-02|-3.503286e+01 -3.503701e+01| 0:0:00| chol  2  2
17|0.937|0.939|3.5e-09|5.0e-08|8.1e-04|-3.504270e+01 -3.503987e+01| 0:0:00| chol  3  3
18|1.000|1.000|1.7e-08|2.2e-10|1.9e-04|-3.504331e+01 -3.504348e+01| 0:0:00| chol  3  3
19|1.000|0.991|4.0e-10|6.4e-12|3.5e-06|-3.504347e+01 -3.504347e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.50434708e+01
 dual   objective value = -3.50434736e+01
```

```
 gap := trace(XZ)       = 3.47e-06
 relative gap           = 4.88e-08
 actual relative gap    = 3.98e-08
 rel. primal infeas     = 4.01e-10
 rel. dual   infeas     = 6.37e-12
 norm(X), norm(y), norm(Z) = 7.3e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.8e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.13
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 1.2e-09  0.0e+00  8.9e-12  0.0e+00  4.0e-08  4.9e-08
------------------------------------------------------------------

ans =

   35.0435

Epoch... 57
Epoch... 58

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.8e+00|2.2e+06| 3.716607e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.978|0.974|2.2e-02|2.6e-01|1.3e+05| 3.579482e+04  1.539533e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.9e-07|3.3e-02|3.6e+04| 2.604742e+04 -6.902747e+01| 0:0:00| chol  1  1
 3|0.998|0.994|3.0e-08|1.0e-02|1.2e+03| 7.700795e+02 -3.930521e+01| 0:0:00| chol  1  1
 4|0.942|0.390|3.4e-07|7.3e-03|9.3e+02| 6.746130e+02 -2.737374e+01| 0:0:00| chol  1  1
 5|0.441|0.858|1.9e-07|1.8e-03|6.3e+02| 5.521377e+02 -2.612177e+01| 0:0:00| chol  1  1
 6|0.608|0.550|8.1e-08|9.6e-04|4.6e+02| 3.883479e+02 -2.299211e+01| 0:0:00| chol  2  2
 7|0.538|0.311|9.6e-08|6.8e-04|3.9e+02| 3.068200e+02 -2.495402e+01| 0:0:00| chol  2  1
 8|0.778|0.495|6.7e-08|3.6e-04|3.2e+02| 2.449572e+02 -3.294016e+01| 0:0:00| chol  2  1
 9|0.380|0.582|4.2e-08|1.6e-04|2.7e+02| 2.081016e+02 -3.415382e+01| 0:0:00| chol  2  2
10|1.000|1.000|3.7e-10|6.0e-06|1.3e+02| 8.768605e+01 -3.936164e+01| 0:0:00| chol  2  2
11|0.855|0.697|3.8e-10|3.9e-06|2.8e+01|-8.266344e+00 -3.585543e+01| 0:0:00| chol  2  2
12|0.736|0.929|1.6e-10|1.7e-06|1.2e+01|-2.352898e+01 -3.511052e+01| 0:0:00| chol  2  2
13|0.988|0.986|3.3e-10|7.6e-07|6.5e-01|-3.419351e+01 -3.478636e+01| 0:0:00| chol  2  2
14|0.887|0.881|1.0e-09|4.2e-07|9.7e-02|-3.472314e+01 -3.479003e+01| 0:0:00| chol  2  2
15|1.000|1.000|1.4e-09|1.9e-07|4.1e-02|-3.477667e+01 -3.480434e+01| 0:0:00| chol  2  2
16|1.000|1.000|1.3e-09|9.4e-08|7.0e-03|-3.480955e+01 -3.480986e+01| 0:0:00| chol  2  2
17|0.950|1.000|1.7e-08|1.7e-10|8.3e-04|-3.481553e+01 -3.481635e+01| 0:0:00| chol  3  4
18|0.983|0.981|1.0e-09|2.3e-11|1.6e-05|-3.481632e+01 -3.481633e+01| 0:0:00| chol  8 10
19|1.000|0.990|1.1e-09|1.4e-12|9.3e-07|-3.481633e+01 -3.481633e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.48163283e+01
 dual   objective value = -3.48163293e+01
```

```
 gap := trace(XZ)       = 9.26e-07
 relative gap           = 1.31e-08
 actual relative gap    = 1.48e-08
 rel. primal infeas     = 1.09e-09
 rel. dual   infeas     = 1.40e-12
 norm(X), norm(y), norm(Z) = 7.1e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.8e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.4e-09  0.0e+00  2.0e-12  0.0e+00  1.5e-08  1.3e-08
------------------------------------------------------------------

ans =

   34.8163

Epoch... 59
Epoch... 60

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.8e+00|2.2e+06| 3.724881e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.978|0.974|2.2e-02|2.6e-01|1.3e+05| 3.588255e+04  1.559039e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.8e-07|3.3e-02|3.6e+04| 2.617015e+04 -6.937838e+01| 0:0:00| chol  1  1
 3|0.998|0.994|3.0e-08|1.0e-02|1.2e+03| 7.708383e+02 -3.935029e+01| 0:0:00| chol  1  1
 4|0.946|0.388|3.4e-07|7.3e-03|9.3e+02| 6.760055e+02 -2.739923e+01| 0:0:00| chol  1  1
 5|0.439|0.858|1.9e-07|1.8e-03|6.4e+02| 5.536191e+02 -2.621328e+01| 0:0:00| chol  2  2
 6|0.602|0.551|8.2e-08|9.6e-04|4.6e+02| 3.908431e+02 -2.296114e+01| 0:0:00| chol  2  2
 7|0.534|0.310|9.6e-08|6.8e-04|4.0e+02| 3.096018e+02 -2.495059e+01| 0:0:00| chol  2  2
 8|0.757|0.497|6.8e-08|3.6e-04|3.2e+02| 2.486983e+02 -3.287951e+01| 0:0:00| chol  2  1
 9|0.383|0.586|4.2e-08|1.5e-04|2.7e+02| 2.109465e+02 -3.408972e+01| 0:0:00| chol  2  2
10|1.000|1.000|4.7e-10|6.0e-06|1.3e+02| 8.823287e+01 -3.916891e+01| 0:0:00| chol  2  2
11|0.850|0.710|2.6e-10|3.9e-06|2.9e+01|-7.192363e+00 -3.559026e+01| 0:0:00| chol  2  2
12|0.706|0.935|9.0e-11|1.7e-06|1.3e+01|-2.222700e+01 -3.492276e+01| 0:0:00| chol  2  2
13|1.000|0.992|4.8e-10|7.6e-07|8.9e-01|-3.373960e+01 -3.457992e+01| 0:0:00| chol  2  2
14|0.912|0.905|1.1e-09|4.1e-07|8.6e-02|-3.451299e+01 -3.457047e+01| 0:0:00| chol  2  2
15|0.994|1.000|9.4e-10|1.9e-07|3.3e-02|-3.456377e+01 -3.458347e+01| 0:0:00| chol  2  2
16|1.000|1.000|2.6e-09|9.4e-08|1.0e-02|-3.458582e+01 -3.458925e+01| 0:0:00| chol  2  2
17|0.961|0.955|5.7e-09|4.9e-08|4.4e-04|-3.459509e+01 -3.459208e+01| 0:0:00| chol  3  3
18|1.000|1.000|2.1e-08|1.1e-10|8.6e-05|-3.459543e+01 -3.459550e+01| 0:0:00| chol  5  5
19|1.000|0.990|7.1e-10|3.0e-12|1.5e-06|-3.459550e+01 -3.459550e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.45954996e+01
 dual   objective value = -3.45955014e+01
```

```
 gap := trace(XZ)       = 1.51e-06
 relative gap           = 2.14e-08
 actual relative gap    = 2.48e-08
 rel. primal infeas     = 7.12e-10
 rel. dual   infeas     = 3.02e-12
 norm(X), norm(y), norm(Z) = 7.0e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 2.2e-09  0.0e+00  4.2e-12  0.0e+00  2.5e-08  2.1e-08
------------------------------------------------------------------

ans =

   34.5955

Epoch... 61
Epoch... 62

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.9e+00|2.2e+06| 3.732488e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.596362e+04  1.575490e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.8e-07|3.3e-02|3.6e+04| 2.625934e+04 -6.968332e+01| 0:0:00| chol  1  1
 3|0.998|0.994|3.1e-08|1.0e-02|1.2e+03| 7.712367e+02 -3.937470e+01| 0:0:00| chol  1  1
 4|0.950|0.385|3.5e-07|7.3e-03|9.3e+02| 6.770783e+02 -2.741294e+01| 0:0:00| chol  1  1
 5|0.438|0.857|1.9e-07|1.8e-03|6.4e+02| 5.547982e+02 -2.630449e+01| 0:0:00| chol  2  1
 6|0.597|0.552|8.4e-08|9.6e-04|4.7e+02| 3.931698e+02 -2.292030e+01| 0:0:00| chol  2  2
 7|0.528|0.310|9.5e-08|6.8e-04|4.0e+02| 3.124960e+02 -2.493967e+01| 0:0:00| chol  2  2
 8|0.722|0.499|6.9e-08|3.6e-04|3.3e+02| 2.537954e+02 -3.281421e+01| 0:0:00| chol  2  1
 9|0.389|0.591|4.2e-08|1.5e-04|2.7e+02| 2.145826e+02 -3.402868e+01| 0:0:00| chol  2  2
10|1.000|1.000|2.5e-10|6.0e-06|1.3e+02| 8.866785e+01 -3.896663e+01| 0:0:00| chol  2  2
11|0.844|0.724|3.5e-10|3.8e-06|3.0e+01|-6.098878e+00 -3.532897e+01| 0:0:00| chol  2  2
12|0.678|0.943|1.7e-10|1.6e-06|1.4e+01|-2.087689e+01 -3.474651e+01| 0:0:00| chol  2  2
13|1.000|1.000|4.7e-10|7.5e-07|1.5e+00|-3.293143e+01 -3.439081e+01| 0:0:00| chol  2  2
14|0.934|0.934|1.3e-09|4.0e-07|1.0e-01|-3.428350e+01 -3.435987e+01| 0:0:00| chol  2  2
15|0.988|0.978|1.1e-09|1.9e-07|3.2e-02|-3.435283e+01 -3.437128e+01| 0:0:00| chol  2  2
16|1.000|1.000|1.7e-09|9.4e-08|1.2e-02|-3.437152e+01 -3.437735e+01| 0:0:00| chol  2  2
17|0.968|0.967|2.3e-09|4.9e-08|4.4e-04|-3.438299e+01 -3.438007e+01| 0:0:00| chol  3  3
18|1.000|1.000|1.6e-08|7.2e-11|5.5e-05|-3.438334e+01 -3.438340e+01| 0:0:00| chol  5  5
19|1.000|0.990|1.9e-09|1.6e-12|6.9e-07|-3.438340e+01 -3.438340e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.43833974e+01
 dual   objective value = -3.43833982e+01
```

```
 gap := trace(XZ)       = 6.91e-07
 relative gap           = 9.91e-09
 actual relative gap    = 1.07e-08
 rel. primal infeas     = 1.90e-09
 rel. dual   infeas     = 1.61e-12
 norm(X), norm(y), norm(Z) = 6.9e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 5.8e-09  0.0e+00  2.3e-12  0.0e+00  1.1e-08  9.9e-09
------------------------------------------------------------------

ans =

   34.3834

Epoch... 63
Epoch... 64

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.9e+00|2.3e+06| 3.751399e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.615189e+04  1.594785e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.4e-07|5.5e-02|3.7e+04| 2.284459e+04 -6.318091e+01| 0:0:00| chol  1  1
 3|1.000|1.000|2.1e-08|1.6e-02|2.0e+03| 1.385482e+03 -3.647675e+01| 0:0:00| chol  1  1
 4|0.959|0.756|1.9e-07|7.8e-03|1.2e+03| 9.412696e+02 -2.561244e+01| 0:0:00| chol  1  1
 5|0.610|0.979|7.5e-08|1.6e-03|7.7e+02| 6.948631e+02 -2.555351e+01| 0:0:00| chol  2  2
 6|0.660|0.561|3.1e-08|9.6e-04|5.5e+02| 4.745723e+02 -2.295610e+01| 0:0:00| chol  2  2
 7|0.541|0.322|8.6e-08|6.9e-04|4.6e+02| 3.728765e+02 -2.485500e+01| 0:0:00| chol  2  2
 8|1.000|0.467|5.0e-08|3.9e-04|3.6e+02| 2.710627e+02 -3.257649e+01| 0:0:00| chol  2  1
 9|0.307|0.579|3.6e-08|1.8e-04|2.8e+02| 2.219582e+02 -3.396845e+01| 0:0:00| chol  2  2
10|1.000|1.000|5.1e-10|1.0e-05|1.3e+02| 9.124148e+01 -3.869835e+01| 0:0:00| chol  2  2
11|0.844|0.760|4.0e-10|6.2e-06|3.1e+01|-4.011691e+00 -3.485049e+01| 0:0:00| chol  2  2
12|0.599|0.970|1.6e-10|2.6e-06|1.7e+01|-1.810290e+01 -3.454538e+01| 0:0:00| chol  2  2
13|1.000|1.000|3.4e-10|1.3e-06|3.7e+00|-3.064309e+01 -3.423367e+01| 0:0:00| chol  2  2
14|0.960|0.936|2.3e-09|6.7e-07|1.5e-01|-3.402429e+01 -3.413260e+01| 0:0:00| chol  2  2
15|0.933|0.878|9.1e-10|3.6e-07|2.3e-02|-3.414709e+01 -3.414555e+01| 0:0:00| chol  2  2
16|1.000|0.926|2.7e-09|1.7e-07|8.8e-03|-3.415978e+01 -3.415695e+01| 0:0:00| chol  2  2
17|1.000|1.000|2.6e-09|7.8e-08|3.2e-03|-3.416512e+01 -3.416297e+01| 0:0:00| chol  2  2
18|0.985|0.975|4.6e-08|2.1e-09|7.1e-05|-3.416810e+01 -3.416804e+01| 0:0:00| chol  4  4
19|1.000|0.990|1.5e-09|2.3e-11|1.9e-06|-3.416816e+01 -3.416816e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.41681619e+01
 dual   objective value = -3.41681638e+01
```

```
 gap := trace(XZ)       = 1.93e-06
 relative gap           = 2.79e-08
 actual relative gap    = 2.85e-08
 rel. primal infeas     = 1.47e-09
 rel. dual   infeas     = 2.26e-11
 norm(X), norm(y), norm(Z) = 6.8e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 4.5e-09  0.0e+00  3.2e-11  0.0e+00  2.9e-08  2.8e-08
------------------------------------------------------------------

ans =

   34.1682

Epoch... 65
Epoch... 66

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.9e+00|2.3e+06| 3.757295e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.621689e+04  1.610755e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.4e-07|5.5e-02|3.7e+04| 2.293075e+04 -6.347953e+01| 0:0:00| chol  1  1
 3|1.000|1.000|2.1e-08|1.6e-02|2.1e+03| 1.390567e+03 -3.653193e+01| 0:0:00| chol  1  1
 4|0.965|0.754|1.9e-07|7.8e-03|1.2e+03| 9.414314e+02 -2.563220e+01| 0:0:00| chol  1  1
 5|0.602|0.979|7.6e-08|1.6e-03|7.7e+02| 6.985297e+02 -2.558470e+01| 0:0:00| chol  2  1
 6|0.654|0.563|3.2e-08|9.6e-04|5.6e+02| 4.790108e+02 -2.294203e+01| 0:0:00| chol  2  2
 7|0.534|0.321|8.6e-08|6.9e-04|4.7e+02| 3.778408e+02 -2.484927e+01| 0:0:00| chol  2  2
 8|1.000|0.467|4.9e-08|3.9e-04|3.6e+02| 2.745119e+02 -3.259605e+01| 0:0:00| chol  2  1
 9|0.311|0.583|3.6e-08|1.7e-04|2.9e+02| 2.253844e+02 -3.394755e+01| 0:0:00| chol  1  2
10|1.000|1.000|3.9e-10|1.0e-05|1.3e+02| 9.203640e+01 -3.853354e+01| 0:0:00| chol  2  2
11|0.840|0.774|2.0e-10|6.1e-06|3.2e+01|-3.117709e+00 -3.460468e+01| 0:0:00| chol  2  2
12|0.580|0.990|7.7e-11|2.5e-06|1.8e+01|-1.683491e+01 -3.439518e+01| 0:0:00| chol  2  2
13|1.000|1.000|3.5e-10|1.3e-06|5.0e+00|-2.921829e+01 -3.408531e+01| 0:0:00| chol  2  2
14|0.964|0.931|2.9e-09|6.7e-07|1.9e-01|-3.378505e+01 -3.393401e+01| 0:0:00| chol  2  2
15|0.924|0.895|8.9e-10|3.5e-07|2.3e-02|-3.394283e+01 -3.394295e+01| 0:0:00| chol  2  2
16|1.000|0.881|1.3e-09|1.8e-07|8.7e-03|-3.395641e+01 -3.395309e+01| 0:0:00| chol  2  2
17|1.000|1.000|5.0e-09|7.8e-08|3.2e-03|-3.396148e+01 -3.395949e+01| 0:0:00| chol  3  3
18|0.985|0.980|4.7e-09|1.7e-09|7.2e-05|-3.396453e+01 -3.396449e+01| 0:0:00| chol  4  4
19|1.000|0.990|1.1e-09|1.8e-11|1.3e-06|-3.396459e+01 -3.396459e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.39645916e+01
 dual   objective value = -3.39645915e+01
```

```
 gap := trace(XZ)       = 1.32e-06
 relative gap           = 1.91e-08
 actual relative gap    = -2.52e-09
 rel. primal infeas     = 1.12e-09
 rel. dual   infeas     = 1.79e-11
 norm(X), norm(y), norm(Z) = 6.7e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.5e-09  0.0e+00  2.5e-11  0.0e+00  -2.5e-09  1.9e-08
------------------------------------------------------------------

ans =

   33.9646

Epoch... 67
Epoch... 68

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.9e+00|2.3e+06| 3.761340e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.626468e+04  1.629213e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.4e-07|5.5e-02|3.7e+04| 2.302281e+04 -6.374920e+01| 0:0:00| chol  1  1
 3|1.000|1.000|2.1e-08|1.7e-02|2.1e+03| 1.396010e+03 -3.657255e+01| 0:0:00| chol  1  1
 4|0.971|0.752|1.9e-07|7.8e-03|1.2e+03| 9.417431e+02 -2.564504e+01| 0:0:00| chol  1  1
 5|0.596|0.979|7.8e-08|1.6e-03|7.8e+02| 7.015666e+02 -2.560941e+01| 0:0:00| chol  2  2
 6|0.647|0.565|3.3e-08|9.6e-04|5.6e+02| 4.831661e+02 -2.292091e+01| 0:0:00| chol  2  2
 7|0.526|0.319|8.6e-08|6.9e-04|4.7e+02| 3.829225e+02 -2.483974e+01| 0:0:00| chol  2  2
 8|1.000|0.467|4.8e-08|3.9e-04|3.6e+02| 2.779572e+02 -3.262018e+01| 0:0:00| chol  1  1
 9|0.316|0.589|3.5e-08|1.7e-04|2.9e+02| 2.292911e+02 -3.393515e+01| 0:0:00| chol  2  2
10|1.000|1.000|4.1e-10|1.0e-05|1.3e+02| 9.262777e+01 -3.836018e+01| 0:0:00| chol  2  2
11|0.837|0.788|3.2e-10|6.1e-06|3.3e+01|-2.336326e+00 -3.436507e+01| 0:0:00| chol  2  2
12|0.566|1.000|1.3e-10|2.5e-06|1.9e+01|-1.565900e+01 -3.425854e+01| 0:0:00| chol  2  2
13|1.000|1.000|3.6e-10|1.3e-06|5.7e+00|-2.835970e+01 -3.391934e+01| 0:0:00| chol  2  2
14|0.966|0.929|3.4e-09|6.7e-07|2.2e-01|-3.356815e+01 -3.374021e+01| 0:0:00| chol  2  2
15|0.924|0.901|9.6e-10|3.5e-07|2.4e-02|-3.374552e+01 -3.374677e+01| 0:0:00| chol  2  2
16|0.989|0.863|1.8e-09|1.8e-07|8.4e-03|-3.375984e+01 -3.375629e+01| 0:0:00| chol  2  2
17|1.000|1.000|3.2e-09|7.8e-08|3.1e-03|-3.376476e+01 -3.376276e+01| 0:0:00| chol  2  2
18|0.985|0.981|2.0e-08|1.6e-09|7.2e-05|-3.376771e+01 -3.376768e+01| 0:0:00| chol  4  4
19|1.000|0.990|1.0e-09|1.7e-11|1.4e-06|-3.376777e+01 -3.376778e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.37677743e+01
 dual   objective value = -3.37677756e+01
```

```
 gap := trace(XZ)       = 1.37e-06
 relative gap           = 2.00e-08
 actual relative gap    = 1.79e-08
 rel. primal infeas     = 9.99e-10
 rel. dual   infeas     = 1.74e-11
 norm(X), norm(y), norm(Z) = 6.5e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.1e-09  0.0e+00  2.4e-11  0.0e+00  1.8e-08  2.0e-08
------------------------------------------------------------------

ans =

   33.7678

Epoch... 69
Epoch... 70

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|5.9e+00|2.3e+06| 3.765464e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.631280e+04  1.642908e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.4e-07|5.5e-02|3.7e+04| 2.310130e+04 -6.402670e+01| 0:0:00| chol  1  1
 3|1.000|0.999|2.1e-08|1.7e-02|2.1e+03| 1.400615e+03 -3.661877e+01| 0:0:00| chol  1  1
 4|0.976|0.750|1.9e-07|7.8e-03|1.2e+03| 9.416619e+02 -2.566193e+01| 0:0:00| chol  1  1
 5|0.590|0.979|8.0e-08|1.6e-03|7.8e+02| 7.044128e+02 -2.563848e+01| 0:0:00| chol  2  1
 6|0.640|0.567|3.4e-08|9.5e-04|5.6e+02| 4.873226e+02 -2.290182e+01| 0:0:00| chol  2  2
 7|0.516|0.318|8.5e-08|6.9e-04|4.8e+02| 3.883508e+02 -2.483521e+01| 0:0:00| chol  2  2
 8|1.000|0.468|4.7e-08|3.9e-04|3.7e+02| 2.814815e+02 -3.266264e+01| 0:0:00| chol  1  1
 9|0.320|0.591|3.4e-08|1.7e-04|3.0e+02| 2.340536e+02 -3.393984e+01| 0:0:00| chol  2  2
10|1.000|1.000|4.1e-10|1.0e-05|1.3e+02| 9.232547e+01 -3.816957e+01| 0:0:00| chol  2  2
11|0.834|0.797|4.6e-10|6.0e-06|3.3e+01|-1.894872e+00 -3.414017e+01| 0:0:00| chol  2  2
12|0.559|1.000|2.1e-10|2.5e-06|2.0e+01|-1.482228e+01 -3.412384e+01| 0:0:00| chol  2  2
13|1.000|1.000|3.7e-10|1.3e-06|5.9e+00|-2.796010e+01 -3.374380e+01| 0:0:00| chol  2  2
14|0.967|0.929|3.6e-09|6.7e-07|2.2e-01|-3.337666e+01 -3.355541e+01| 0:0:00| chol  2  2
15|0.923|0.902|9.5e-10|3.5e-07|2.4e-02|-3.355927e+01 -3.356102e+01| 0:0:00| chol  2  2
16|0.982|0.858|1.2e-09|1.8e-07|8.5e-03|-3.357365e+01 -3.357026e+01| 0:0:00| chol  2  2
17|1.000|1.000|4.6e-09|7.8e-08|3.1e-03|-3.357860e+01 -3.357667e+01| 0:0:00| chol  2  2
18|0.985|0.980|5.2e-08|1.6e-09|7.2e-05|-3.358154e+01 -3.358151e+01| 0:0:00| chol  3  3
19|1.000|0.990|1.7e-09|1.8e-11|1.5e-06|-3.358160e+01 -3.358160e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.35816014e+01
 dual   objective value = -3.35816019e+01
```

```
 gap := trace(XZ)       = 1.49e-06
 relative gap           = 2.18e-08
 actual relative gap    = 6.66e-09
 rel. primal infeas     = 1.66e-09
 rel. dual   infeas     = 1.81e-11
 norm(X), norm(y), norm(Z) = 6.4e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.16
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 5.1e-09  0.0e+00  2.5e-11  0.0e+00  6.7e-09  2.2e-08
------------------------------------------------------------------

ans =

   33.5816

Epoch... 71
Epoch... 72

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.0e+00|2.3e+06| 3.780687e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.646603e+04  1.657611e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.4e-07|5.5e-02|3.8e+04| 2.322923e+04 -6.433905e+01| 0:0:00| chol  1  1
 3|1.000|0.999|2.1e-08|1.7e-02|2.1e+03| 1.408215e+03 -3.667995e+01| 0:0:00| chol  1  1
 4|0.983|0.749|1.9e-07|7.9e-03|1.2e+03| 9.430438e+02 -2.567599e+01| 0:0:00| chol  1  1
 5|0.586|0.979|8.1e-08|1.6e-03|7.8e+02| 7.075394e+02 -2.565507e+01| 0:0:00| chol  2  1
 6|0.632|0.569|3.5e-08|9.5e-04|5.7e+02| 4.920154e+02 -2.287365e+01| 0:0:00| chol  2  2
 7|0.503|0.316|8.5e-08|6.9e-04|4.8e+02| 3.946772e+02 -2.483121e+01| 0:0:00| chol  2  2
 8|1.000|0.470|4.5e-08|3.9e-04|3.7e+02| 2.853154e+02 -3.274591e+01| 0:0:00| chol  1  1
 9|0.322|0.597|3.3e-08|1.7e-04|3.0e+02| 2.407663e+02 -3.398908e+01| 0:0:00| chol  2  2
10|1.000|1.000|3.8e-10|1.0e-05|1.3e+02| 9.116940e+01 -3.793097e+01| 0:0:00| chol  2  2
11|0.830|0.801|3.8e-10|6.0e-06|3.3e+01|-1.847301e+00 -3.391689e+01| 0:0:00| chol  2  1
12|0.560|1.000|3.7e-10|2.5e-06|2.0e+01|-1.439878e+01 -3.397404e+01| 0:0:00| chol  2  2
13|1.000|1.000|2.1e-10|1.3e-06|5.7e+00|-2.790979e+01 -3.355181e+01| 0:0:00| chol  2  2
14|0.967|0.929|3.5e-09|6.7e-07|2.1e-01|-3.319799e+01 -3.336894e+01| 0:0:00| chol  2  2
15|0.923|0.901|9.7e-10|3.5e-07|2.3e-02|-3.337350e+01 -3.337468e+01| 0:0:00| chol  2  2
16|0.981|0.858|1.6e-09|1.8e-07|8.0e-03|-3.338743e+01 -3.338379e+01| 0:0:00| chol  2  2
17|1.000|1.000|2.5e-09|7.8e-08|2.9e-03|-3.339221e+01 -3.339011e+01| 0:0:00| chol  2  2
18|0.985|0.980|1.0e-08|1.6e-09|6.6e-05|-3.339491e+01 -3.339488e+01| 0:0:00| chol  3  3
19|1.000|0.990|2.8e-09|1.8e-11|1.4e-06|-3.339498e+01 -3.339498e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.33949775e+01
 dual   objective value = -3.33949783e+01
```

```
 gap := trace(XZ)       = 1.43e-06
 relative gap           = 2.11e-08
 actual relative gap    = 1.17e-08
 rel. primal infeas     = 2.75e-09
 rel. dual   infeas     = 1.80e-11
 norm(X), norm(y), norm(Z) = 6.3e+03, 9.2e+01, 5.9e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 8.5e-09  0.0e+00  2.5e-11  0.0e+00  1.2e-08  2.1e-08
------------------------------------------------------------------

ans =

   33.3950

Epoch... 73
Epoch... 74

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.0e+00|2.3e+06| 3.786204e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.652682e+04  1.672833e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.4e-07|5.5e-02|3.8e+04| 2.330889e+04 -6.461624e+01| 0:0:00| chol  1  1
 3|1.000|0.999|2.1e-08|1.7e-02|2.1e+03| 1.412977e+03 -3.672801e+01| 0:0:00| chol  1  1
 4|0.988|0.746|1.9e-07|7.9e-03|1.2e+03| 9.430194e+02 -2.569203e+01| 0:0:00| chol  1  1
 5|0.580|0.979|8.2e-08|1.6e-03|7.9e+02| 7.103896e+02 -2.568845e+01| 0:0:00| chol  1  2
 6|0.626|0.571|3.6e-08|9.5e-04|5.7e+02| 4.959400e+02 -2.285071e+01| 0:0:00| chol  2  2
 7|0.490|0.315|8.4e-08|6.9e-04|4.9e+02| 4.006377e+02 -2.482193e+01| 0:0:00| chol  1  2
 8|1.000|0.472|4.4e-08|3.8e-04|3.7e+02| 2.885764e+02 -3.280180e+01| 0:0:00| chol  2  1
 9|0.315|0.607|3.3e-08|1.6e-04|3.1e+02| 2.489614e+02 -3.405350e+01| 0:0:00| chol  2  2
10|1.000|1.000|4.4e-10|1.0e-05|1.3e+02| 8.976005e+01 -3.763559e+01| 0:0:00| chol  2  2
11|0.826|0.798|3.8e-10|6.0e-06|3.2e+01|-1.919355e+00 -3.370765e+01| 0:0:00| chol  2  2
12|0.571|1.000|1.6e-10|2.5e-06|2.0e+01|-1.414277e+01 -3.382483e+01| 0:0:00| chol  2  2
13|1.000|1.000|3.0e-10|1.3e-06|5.3e+00|-2.812992e+01 -3.334693e+01| 0:0:00| chol  2  1
14|0.967|0.928|3.3e-09|6.7e-07|2.0e-01|-3.302653e+01 -3.318240e+01| 0:0:00| chol  2  2
15|0.920|0.893|9.9e-10|3.5e-07|2.4e-02|-3.318745e+01 -3.318906e+01| 0:0:00| chol  2  2
16|0.986|0.865|1.3e-09|1.8e-07|8.9e-03|-3.320079e+01 -3.319827e+01| 0:0:00| chol  2  2
17|1.000|1.000|2.3e-09|7.8e-08|3.3e-03|-3.320600e+01 -3.320442e+01| 0:0:00| chol  2  2
18|0.984|0.980|1.6e-08|1.6e-09|7.1e-05|-3.320913e+01 -3.320910e+01| 0:0:00| chol  4  4
19|1.000|0.990|1.2e-09|1.8e-11|1.3e-06|-3.320919e+01 -3.320919e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.32091911e+01
 dual   objective value = -3.32091928e+01
```

```
 gap := trace(XZ)       = 1.34e-06
 relative gap           = 1.99e-08
 actual relative gap    = 2.40e-08
 rel. primal infeas     = 1.23e-09
 rel. dual   infeas     = 1.80e-11
 norm(X), norm(y), norm(Z) = 6.2e+03, 9.2e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.8e-09  0.0e+00  2.5e-11  0.0e+00  2.4e-08  2.0e-08
------------------------------------------------------------------

ans =

   33.2092

Epoch... 75
Epoch... 76

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.0e+00|2.3e+06| 3.805024e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.671341e+04  1.685975e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.4e-07|5.5e-02|3.8e+04| 2.340528e+04 -6.488343e+01| 0:0:00| chol  1  1
 3|1.000|0.999|2.1e-08|1.7e-02|2.1e+03| 1.418861e+03 -3.678100e+01| 0:0:00| chol  1  1
 4|0.995|0.744|1.9e-07|7.9e-03|1.2e+03| 9.435668e+02 -2.570559e+01| 0:0:00| chol  1  1
 5|0.575|0.979|8.3e-08|1.6e-03|7.9e+02| 7.134841e+02 -2.572279e+01| 0:0:00| chol  2  2
 6|0.620|0.573|3.7e-08|9.5e-04|5.8e+02| 4.997282e+02 -2.283184e+01| 0:0:00| chol  2  2
 7|0.478|0.315|8.2e-08|6.9e-04|4.9e+02| 4.061257e+02 -2.481519e+01| 0:0:00| chol  2  2
 8|1.000|0.477|4.2e-08|3.8e-04|3.8e+02| 2.912826e+02 -3.286596e+01| 0:0:00| chol  2  1
 9|0.298|0.622|3.3e-08|1.6e-04|3.2e+02| 2.587050e+02 -3.414718e+01| 0:0:00| chol  2  2
10|1.000|1.000|2.9e-10|1.0e-05|1.3e+02| 8.759434e+01 -3.723917e+01| 0:0:00| chol  2  2
11|0.850|0.807|3.5e-10|6.0e-06|3.3e+01|-1.126681e+00 -3.356519e+01| 0:0:00| chol  2  2
12|0.637|1.000|1.3e-10|2.5e-06|1.9e+01|-1.449797e+01 -3.367664e+01| 0:0:00| chol  2  2
13|1.000|1.000|2.4e-10|1.3e-06|4.0e+00|-2.915231e+01 -3.310660e+01| 0:0:00| chol  2  2
14|0.964|0.928|2.5e-09|6.7e-07|1.6e-01|-3.288382e+01 -3.299883e+01| 0:0:00| chol  2  2
15|0.922|0.878|9.1e-10|3.6e-07|2.2e-02|-3.300860e+01 -3.300888e+01| 0:0:00| chol  2  2
16|1.000|0.896|1.9e-09|1.8e-07|8.4e-03|-3.302125e+01 -3.301873e+01| 0:0:00| chol  2  2
17|1.000|1.000|2.8e-09|7.8e-08|3.0e-03|-3.302637e+01 -3.302451e+01| 0:0:00| chol  2  2
18|0.984|0.981|3.9e-08|1.6e-09|6.0e-05|-3.302917e+01 -3.302914e+01| 0:0:00| chol  3  3
19|1.000|0.990|3.7e-09|1.7e-11|1.0e-06|-3.302922e+01 -3.302922e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.30292246e+01
 dual   objective value = -3.30292244e+01
```

```
 gap := trace(XZ)       = 1.00e-06
 relative gap           = 1.50e-08
 actual relative gap    = -3.23e-09
 rel. primal infeas     = 3.72e-09
 rel. dual   infeas     = 1.67e-11
 norm(X), norm(y), norm(Z) = 6.1e+03, 9.2e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 1.1e-08  0.0e+00  2.3e-11  0.0e+00  -3.2e-09  1.5e-08
------------------------------------------------------------------

ans =

   33.0292

Epoch... 77
Epoch... 78

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.0e+00|2.4e+06| 3.817415e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.683897e+04  1.698607e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.4e-07|5.5e-02|3.8e+04| 2.349119e+04 -6.515725e+01| 0:0:00| chol  1  1
 3|1.000|0.999|2.2e-08|1.7e-02|2.1e+03| 1.424069e+03 -3.683195e+01| 0:0:00| chol  1  1
 4|1.000|0.742|2.0e-07|7.9e-03|1.2e+03| 9.440077e+02 -2.571889e+01| 0:0:00| chol  1  1
 5|0.570|0.978|8.5e-08|1.6e-03|7.9e+02| 7.159329e+02 -2.575817e+01| 0:0:00| chol  1  2
 6|0.614|0.575|3.8e-08|9.5e-04|5.8e+02| 5.033476e+02 -2.280245e+01| 0:0:00| chol  2  2
 7|0.462|0.314|8.1e-08|6.9e-04|5.0e+02| 4.125454e+02 -2.480490e+01| 0:0:00| chol  2  2
 8|0.849|0.483|4.6e-08|3.8e-04|3.9e+02| 3.119004e+02 -3.294770e+01| 0:0:00| chol  2  1
 9|0.295|0.643|3.6e-08|1.5e-04|3.4e+02| 2.818565e+02 -3.422253e+01| 0:0:00| chol  1  2
10|1.000|1.000|4.5e-10|1.0e-05|1.3e+02| 9.042853e+01 -3.701812e+01| 0:0:00| chol  2  2
11|0.863|0.812|2.8e-10|5.9e-06|3.5e+01| 7.706749e-01 -3.349380e+01| 0:0:00| chol  2  1
12|0.836|1.000|8.8e-10|2.5e-06|1.7e+01|-1.647862e+01 -3.356378e+01| 0:0:00| chol  2  2
13|1.000|0.981|4.4e-10|1.3e-06|2.1e+00|-3.081691e+01 -3.285897e+01| 0:0:00| chol  2  2
14|0.949|0.931|1.6e-09|6.7e-07|1.1e-01|-3.274616e+01 -3.281803e+01| 0:0:00| chol  2  2
15|0.962|0.860|9.3e-10|3.6e-07|2.5e-02|-3.282984e+01 -3.283231e+01| 0:0:00| chol  2  2
16|1.000|1.000|1.8e-09|1.6e-07|9.7e-03|-3.284360e+01 -3.284376e+01| 0:0:00| chol  2  2
17|0.975|0.980|3.1e-09|8.0e-08|3.6e-04|-3.285259e+01 -3.284809e+01| 0:0:00| chol  3  3
18|1.000|1.000|2.2e-08|2.5e-10|1.7e-04|-3.285277e+01 -3.285293e+01| 0:0:00| chol  3  4
19|1.000|0.990|2.8e-10|5.6e-12|2.1e-06|-3.285292e+01 -3.285292e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.28529182e+01
 dual   objective value = -3.28529200e+01
```

```
 gap := trace(XZ)       = 2.11e-06
 relative gap           = 3.17e-08
 actual relative gap    = 2.66e-08
 rel. primal infeas     = 2.76e-10
 rel. dual   infeas     = 5.60e-12
 norm(X), norm(y), norm(Z) = 6.1e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 8.5e-10  0.0e+00  7.9e-12  0.0e+00  2.7e-08  3.2e-08
------------------------------------------------------------------

ans =

   32.8529

Epoch... 79
Epoch... 80

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.0e+00|2.4e+06| 3.823429e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.690451e+04  1.709384e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.4e-07|5.5e-02|3.8e+04| 2.354890e+04 -6.538457e+01| 0:0:00| chol  1  1
 3|1.000|0.999|2.2e-08|1.7e-02|2.1e+03| 1.427580e+03 -3.687960e+01| 0:0:00| chol  1  1
 4|1.000|0.740|2.0e-07|8.0e-03|1.2e+03| 9.459989e+02 -2.573959e+01| 0:0:00| chol  1  1
 5|0.569|0.978|8.5e-08|1.6e-03|7.9e+02| 7.147935e+02 -2.582441e+01| 0:0:00| chol  2  2
 6|0.606|0.581|3.9e-08|9.4e-04|5.8e+02| 5.051730e+02 -2.272915e+01| 0:0:00| chol  2  2
 7|0.423|0.313|7.7e-08|6.9e-04|5.1e+02| 4.219466e+02 -2.477379e+01| 0:0:00| chol  2  2
 8|0.589|0.499|5.2e-08|3.6e-04|4.2e+02| 3.473981e+02 -3.298188e+01| 0:0:00| chol  2  1
 9|0.319|0.693|3.9e-08|1.3e-04|3.6e+02| 3.105520e+02 -3.446723e+01| 0:0:00| chol  2  1
10|1.000|1.000|2.2e-09|1.0e-05|1.4e+02| 9.628679e+01 -3.696457e+01| 0:0:00| chol  2  2
11|0.845|0.815|3.9e-10|5.9e-06|3.8e+01| 3.686153e+00 -3.346133e+01| 0:0:00| chol  2  1
12|0.992|1.000|4.0e-10|2.5e-06|1.7e+01|-1.659875e+01 -3.348888e+01| 0:0:00| chol  2  2
13|0.993|0.962|3.4e-10|1.3e-06|1.4e+00|-3.131251e+01 -3.267548e+01| 0:0:00| chol  2  2
14|0.935|0.927|1.3e-10|6.7e-07|1.0e-01|-3.259073e+01 -3.265209e+01| 0:0:00| chol  2  2
15|0.990|0.918|1.3e-09|3.4e-07|3.7e-02|-3.265197e+01 -3.266865e+01| 0:0:00| chol  2  2
16|1.000|1.000|1.0e-09|1.6e-07|1.5e-02|-3.267334e+01 -3.267872e+01| 0:0:00| chol  2  2
17|0.979|0.982|2.4e-09|8.0e-08|3.3e-04|-3.268725e+01 -3.268281e+01| 0:0:00| chol  3  3
18|1.000|1.000|5.2e-08|8.6e-11|1.1e-04|-3.268748e+01 -3.268757e+01| 0:0:00| chol  4  5
19|1.000|0.991|1.5e-09|3.1e-12|1.5e-06|-3.268756e+01 -3.268757e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.26875649e+01
 dual   objective value = -3.26875655e+01
```

```
 gap := trace(XZ)       = 1.54e-06
 relative gap           = 2.31e-08
 actual relative gap    = 8.88e-09
 rel. primal infeas     = 1.48e-09
 rel. dual   infeas     = 3.07e-12
 norm(X), norm(y), norm(Z) = 6.0e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 4.5e-09  0.0e+00  4.3e-12  0.0e+00  8.9e-09  2.3e-08
------------------------------------------------------------------

ans =

   32.6876

Epoch... 81
Epoch... 82

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.1e+00|2.4e+06| 3.827677e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.979|0.974|2.1e-02|2.6e-01|1.3e+05| 3.695336e+04  1.722858e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|3.8e+04| 2.362301e+04 -6.561003e+01| 0:0:00| chol  1  1
 3|1.000|0.999|2.2e-08|1.7e-02|2.1e+03| 1.432017e+03 -3.690752e+01| 0:0:00| chol  1  1
 4|1.000|0.739|2.0e-07|8.0e-03|1.2e+03| 9.482089e+02 -2.574533e+01| 0:0:00| chol  1  1
 5|0.570|0.977|8.4e-08|1.6e-03|7.9e+02| 7.137575e+02 -2.586784e+01| 0:0:00| chol  2  2
 6|0.599|0.588|4.0e-08|9.3e-04|5.8e+02| 5.070958e+02 -2.264019e+01| 0:0:00| chol  1  1
 7|0.369|0.316|7.3e-08|6.8e-04|5.2e+02| 4.344582e+02 -2.477685e+01| 0:0:00| chol  2  1
 8|0.381|0.546|5.6e-08|3.3e-04|4.5e+02| 3.807442e+02 -3.318640e+01| 0:0:00| chol  2  2
 9|0.371|0.762|4.0e-08|9.4e-05|3.8e+02| 3.302810e+02 -3.516016e+01| 0:0:00| chol  1  2
10|1.000|1.000|1.9e-10|1.0e-05|1.4e+02| 9.996182e+01 -3.695724e+01| 0:0:00| chol  2  2
11|0.836|0.839|2.6e-10|5.8e-06|4.1e+01| 6.594361e+00 -3.341475e+01| 0:0:00| chol  2  2
12|1.000|1.000|1.7e-11|2.5e-06|2.0e+01|-1.362579e+01 -3.339878e+01| 0:0:00| chol  2  2
13|0.968|0.943|3.0e-10|1.3e-06|1.9e+00|-3.072925e+01 -3.251728e+01| 0:0:00| chol  2  2
14|0.941|0.930|8.4e-11|6.7e-07|1.2e-01|-3.240234e+01 -3.248561e+01| 0:0:00| chol  2  2
15|1.000|0.919|9.1e-10|3.4e-07|4.2e-02|-3.248004e+01 -3.250146e+01| 0:0:00| chol  2  2
16|1.000|1.000|9.1e-10|1.6e-07|1.6e-02|-3.250438e+01 -3.251119e+01| 0:0:00| chol  2  2
17|0.979|0.982|1.6e-09|8.0e-08|3.5e-04|-3.251952e+01 -3.251518e+01| 0:0:00| chol  4  4
18|1.000|1.000|5.1e-08|2.5e-11|1.0e-04|-3.251984e+01 -3.251986e+01| 0:0:00| chol  5  6
19|1.000|0.995|2.9e-09|2.6e-12|1.6e-06|-3.251986e+01 -3.251986e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.25198564e+01
 dual   objective value = -3.25198605e+01
```

```
 gap := trace(XZ)       = 1.62e-06
 relative gap           = 2.45e-08
 actual relative gap    = 6.19e-08
 rel. primal infeas     = 2.94e-09
 rel. dual   infeas     = 2.62e-12
 norm(X), norm(y), norm(Z) = 5.9e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 2.9e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 9.0e-09  0.0e+00  3.7e-12  0.0e+00  6.2e-08  2.5e-08
------------------------------------------------------------------

ans =

   32.5199

Epoch... 83
Epoch... 84

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.1e+00|2.4e+06| 3.849712e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.980|0.974|2.0e-02|2.6e-01|1.4e+05| 3.716942e+04  1.723485e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|3.8e+04| 2.365381e+04 -6.582434e+01| 0:0:00| chol  1  1
 3|1.000|0.999|2.2e-08|1.7e-02|2.1e+03| 1.434117e+03 -3.697421e+01| 0:0:00| chol  1  1
 4|1.000|0.735|1.9e-07|8.0e-03|1.2e+03| 9.503219e+02 -2.576763e+01| 0:0:00| chol  1  1
 5|0.569|0.976|8.4e-08|1.6e-03|7.9e+02| 7.128260e+02 -2.594910e+01| 0:0:00| chol  2  1
 6|0.594|0.594|4.0e-08|9.3e-04|5.8e+02| 5.081793e+02 -2.256727e+01| 0:0:00| chol  2  1
 7|0.315|0.327|6.5e-08|6.7e-04|5.3e+02| 4.461811e+02 -2.482284e+01| 0:0:00| chol  2  1
 8|0.291|0.621|5.4e-08|2.8e-04|4.6e+02| 4.000727e+02 -3.334753e+01| 0:0:00| chol  2  2
 9|0.407|0.912|3.8e-08|3.5e-05|3.8e+02| 3.353196e+02 -3.674602e+01| 0:0:00| chol  2  1
10|1.000|1.000|5.4e-09|6.0e-06|1.4e+02| 9.711363e+01 -3.690272e+01| 0:0:00| chol  2  2
11|0.846|0.860|7.3e-10|3.4e-06|4.0e+01| 5.778599e+00 -3.347336e+01| 0:0:00| chol  2  2
12|1.000|1.000|4.0e-11|1.5e-06|2.0e+01|-1.374186e+01 -3.327216e+01| 0:0:00| chol  2  2
13|0.969|0.962|4.0e-10|7.8e-07|2.1e+00|-3.036404e+01 -3.238884e+01| 0:0:00| chol  2  2
14|0.937|0.930|1.7e-09|4.0e-07|1.5e-01|-3.221345e+01 -3.234317e+01| 0:0:00| chol  2  2
15|1.000|1.000|7.4e-10|1.9e-07|5.6e-02|-3.230688e+01 -3.235187e+01| 0:0:00| chol  2  2
16|1.000|1.000|6.4e-10|9.4e-08|4.0e-03|-3.235691e+01 -3.235549e+01| 0:0:00| chol  2  2
17|1.000|0.996|1.0e-08|4.5e-10|1.5e-04|-3.236066e+01 -3.236078e+01| 0:0:00| chol  4  4
18|0.999|0.993|4.5e-10|5.9e-12|1.9e-06|-3.236080e+01 -3.236080e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 18
 primal objective value = -3.23607980e+01
 dual   objective value = -3.23607990e+01
 gap := trace(XZ)       = 1.90e-06
```

```
 relative gap           = 2.89e-08
 actual relative gap    = 1.45e-08
 rel. primal infeas     = 4.52e-10
 rel. dual   infeas     = 5.92e-12
 norm(X), norm(y), norm(Z) = 5.8e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 3.0e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 1.4e-09  0.0e+00  8.3e-12  0.0e+00  1.5e-08  2.9e-08
------------------------------------------------------------------

ans =

   32.3608

Epoch... 85
Epoch... 86

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.1e+00|2.4e+06| 3.854927e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.980|0.974|2.0e-02|2.6e-01|1.4e+05| 3.722739e+04  1.734716e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|3.8e+04| 2.370506e+04 -6.599270e+01| 0:0:00| chol  1  1
 3|1.000|0.999|2.2e-08|1.7e-02|2.1e+03| 1.437239e+03 -3.698668e+01| 0:0:00| chol  1  1
 4|1.000|0.733|1.9e-07|8.0e-03|1.2e+03| 9.518820e+02 -2.576519e+01| 0:0:00| chol  1  1
 5|0.569|0.975|8.4e-08|1.6e-03|7.9e+02| 7.119048e+02 -2.598381e+01| 0:0:00| chol  2  2
 6|0.587|0.586|4.1e-08|9.4e-04|5.8e+02| 5.098670e+02 -2.256114e+01| 0:0:00| chol  2  2
 7|0.320|0.328|6.1e-08|6.8e-04|5.3e+02| 4.467376e+02 -2.475426e+01| 0:0:00| chol  2  2
 8|0.291|0.618|5.0e-08|2.8e-04|4.6e+02| 4.009257e+02 -3.325108e+01| 0:0:00| chol  2  2
 9|0.403|0.900|3.6e-08|3.9e-05|3.8e+02| 3.374962e+02 -3.650856e+01| 0:0:00| chol  2  1
10|1.000|1.000|2.1e-09|6.0e-06|1.4e+02| 9.722955e+01 -3.678842e+01| 0:0:00| chol  2  2
11|0.844|0.859|4.9e-10|3.4e-06|4.0e+01| 6.546950e+00 -3.334054e+01| 0:0:00| chol  2  2
12|1.000|1.000|3.4e-11|1.5e-06|2.0e+01|-1.295443e+01 -3.312174e+01| 0:0:00| chol  2  2
13|0.967|0.952|2.8e-10|7.9e-07|2.1e+00|-3.019661e+01 -3.223630e+01| 0:0:00| chol  2  2
14|0.945|0.930|9.1e-11|4.0e-07|1.4e-01|-3.207225e+01 -3.218727e+01| 0:0:00| chol  2  2
15|1.000|0.926|7.3e-10|2.0e-07|4.0e-02|-3.216646e+01 -3.219446e+01| 0:0:00| chol  2  2
16|1.000|1.000|5.1e-10|9.4e-08|1.4e-02|-3.219125e+01 -3.219951e+01| 0:0:00| chol  2  2
17|0.983|0.985|1.2e-09|4.8e-08|2.4e-04|-3.220418e+01 -3.220169e+01| 0:0:00| chol  4  4
18|1.000|1.000|2.5e-08|5.2e-11|5.1e-05|-3.220435e+01 -3.220441e+01| 0:0:00| chol  5  5
19|1.000|0.991|1.3e-09|1.7e-12|7.7e-07|-3.220441e+01 -3.220441e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.22044090e+01
 dual   objective value = -3.22044091e+01
 gap := trace(XZ)       = 7.67e-07
```

```
 relative gap           = 1.17e-08
 actual relative gap    = 8.48e-10
 rel. primal infeas     = 1.31e-09
 rel. dual   infeas     = 1.68e-12
 norm(X), norm(y), norm(Z) = 5.7e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 3.0e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 4.0e-09  0.0e+00  2.4e-12  0.0e+00  8.5e-10  1.2e-08
------------------------------------------------------------------

ans =

   32.2044

Epoch... 87
Epoch... 88

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.1e+00|2.4e+06| 3.857994e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.980|0.974|2.0e-02|2.6e-01|1.4e+05| 3.726479e+04  1.746712e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|3.9e+04| 2.376244e+04 -6.618828e+01| 0:0:00| chol  1  1
 3|1.000|0.998|2.3e-08|1.7e-02|2.1e+03| 1.440724e+03 -3.701153e+01| 0:0:00| chol  1  1
 4|1.000|0.732|1.9e-07|8.1e-03|1.2e+03| 9.536199e+02 -2.577090e+01| 0:0:00| chol  1  1
 5|0.569|0.975|8.4e-08|1.6e-03|7.9e+02| 7.112066e+02 -2.602530e+01| 0:0:00| chol  2  2
 6|0.581|0.578|4.1e-08|9.5e-04|5.9e+02| 5.115323e+02 -2.256053e+01| 0:0:00| chol  2  1
 7|0.325|0.329|6.0e-08|6.8e-04|5.3e+02| 4.472298e+02 -2.469665e+01| 0:0:00| chol  1  1
 8|0.292|0.614|4.9e-08|2.9e-04|4.6e+02| 4.015192e+02 -3.315750e+01| 0:0:00| chol  1  2
 9|0.399|0.887|3.5e-08|4.3e-05|3.8e+02| 3.393058e+02 -3.627116e+01| 0:0:00| chol  2  1
10|1.000|1.000|2.0e-09|6.0e-06|1.4e+02| 9.790696e+01 -3.668729e+01| 0:0:00| chol  2  2
11|0.841|0.857|5.6e-10|3.4e-06|4.1e+01| 7.359275e+00 -3.321709e+01| 0:0:00| chol  2  2
12|1.000|1.000|5.4e-11|1.5e-06|2.1e+01|-1.211920e+01 -3.297291e+01| 0:0:00| chol  2  2
13|0.965|0.940|4.2e-10|8.0e-07|2.1e+00|-3.004922e+01 -3.208774e+01| 0:0:00| chol  2  2
14|0.950|0.930|1.6e-10|4.1e-07|1.3e-01|-3.193044e+01 -3.203480e+01| 0:0:00| chol  2  2
15|0.972|0.861|7.7e-10|2.2e-07|3.1e-02|-3.202236e+01 -3.204081e+01| 0:0:00| chol  2  2
16|1.000|1.000|1.1e-09|9.4e-08|1.2e-02|-3.203994e+01 -3.204655e+01| 0:0:00| chol  2  2
17|0.979|0.979|1.1e-09|4.8e-08|2.8e-04|-3.205117e+01 -3.204873e+01| 0:0:00| chol  3  3
18|1.000|1.000|4.5e-08|8.2e-11|7.4e-05|-3.205140e+01 -3.205143e+01| 0:0:00| chol  5  5
19|1.000|0.991|1.0e-09|2.2e-12|9.1e-07|-3.205143e+01 -3.205143e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.20514303e+01
 dual   objective value = -3.20514317e+01
 gap := trace(XZ)       = 9.15e-07
```

```
 relative gap           = 1.41e-08
 actual relative gap    = 2.27e-08
 rel. primal infeas     = 1.04e-09
 rel. dual   infeas     = 2.23e-12
 norm(X), norm(y), norm(Z) = 5.6e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 3.0e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.2e-09  0.0e+00  3.1e-12  0.0e+00  2.3e-08  1.4e-08
------------------------------------------------------------------

ans =

   32.0514

Epoch... 89
Epoch... 90

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.1e+00|2.4e+06| 3.862194e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.980|0.974|2.0e-02|2.6e-01|1.4e+05| 3.731279e+04  1.760760e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|3.9e+04| 2.383420e+04 -6.639741e+01| 0:0:00| chol  1  1
 3|1.000|0.998|2.3e-08|1.7e-02|2.1e+03| 1.445076e+03 -3.704174e+01| 0:0:00| chol  1  1
 4|1.000|0.731|1.9e-07|8.1e-03|1.2e+03| 9.557997e+02 -2.577814e+01| 0:0:00| chol  1  1
 5|0.570|0.974|8.4e-08|1.7e-03|7.9e+02| 7.107401e+02 -2.606518e+01| 0:0:00| chol  2  1
 6|0.575|0.571|4.2e-08|9.6e-04|5.9e+02| 5.133871e+02 -2.256048e+01| 0:0:00| chol  2  2
 7|0.330|0.331|5.8e-08|6.9e-04|5.3e+02| 4.478518e+02 -2.464758e+01| 0:0:00| chol  2  2
 8|0.294|0.610|4.7e-08|2.9e-04|4.7e+02| 4.020741e+02 -3.307343e+01| 0:0:00| chol  2  1
 9|0.395|0.876|3.4e-08|4.7e-05|3.8e+02| 3.408629e+02 -3.604807e+01| 0:0:00| chol  2  2
10|1.000|1.000|1.1e-10|6.0e-06|1.4e+02| 9.910409e+01 -3.659619e+01| 0:0:00| chol  2  2
11|0.838|0.854|3.5e-10|3.4e-06|4.2e+01| 8.181275e+00 -3.310350e+01| 0:0:00| chol  2  2
12|1.000|1.000|4.6e-11|1.5e-06|2.2e+01|-1.123322e+01 -3.281986e+01| 0:0:00| chol  2  2
13|0.963|0.927|2.8e-10|8.1e-07|2.1e+00|-2.992248e+01 -3.193990e+01| 0:0:00| chol  2  2
14|0.955|0.930|1.9e-10|4.1e-07|1.2e-01|-3.178753e+01 -3.188224e+01| 0:0:00| chol  2  2
15|0.953|0.847|9.5e-10|2.2e-07|2.6e-02|-3.187397e+01 -3.188764e+01| 0:0:00| chol  2  2
16|1.000|1.000|1.7e-09|9.4e-08|9.8e-03|-3.188893e+01 -3.189348e+01| 0:0:00| chol  2  2
17|0.988|0.981|8.2e-10|4.8e-08|2.2e-04|-3.189816e+01 -3.189571e+01| 0:0:00| chol  3  3
18|1.000|1.000|2.7e-08|6.9e-11|6.9e-05|-3.189829e+01 -3.189837e+01| 0:0:00| chol  5  4
19|1.000|0.991|1.2e-09|2.0e-12|8.5e-07|-3.189837e+01 -3.189837e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.18983667e+01
 dual   objective value = -3.18983665e+01
 gap := trace(XZ)       = 8.48e-07
```

```
 relative gap           = 1.31e-08
 actual relative gap    = -2.11e-09
 rel. primal infeas     = 1.24e-09
 rel. dual   infeas     = 2.01e-12
 norm(X), norm(y), norm(Z) = 5.6e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 3.0e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.14
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.8e-09  0.0e+00  2.8e-12  0.0e+00  -2.1e-09  1.3e-08
------------------------------------------------------------------

ans =

   31.8984

Epoch... 91
Epoch... 92

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.2e+00|2.4e+06| 3.864888e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.980|0.974|2.0e-02|2.6e-01|1.4e+05| 3.734604e+04  1.772259e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|3.9e+04| 2.389169e+04 -6.663049e+01| 0:0:00| chol  1  1
 3|1.000|0.998|2.3e-08|1.7e-02|2.1e+03| 1.448601e+03 -3.709202e+01| 0:0:00| chol  1  1
 4|1.000|0.729|1.9e-07|8.1e-03|1.2e+03| 9.577287e+02 -2.580132e+01| 0:0:00| chol  1  1
 5|0.569|0.974|8.4e-08|1.7e-03|7.9e+02| 7.105827e+02 -2.612540e+01| 0:0:00| chol  2  2
 6|0.570|0.565|4.2e-08|9.7e-04|5.9e+02| 5.150919e+02 -2.257129e+01| 0:0:00| chol  1  2
 7|0.336|0.332|5.7e-08|6.9e-04|5.3e+02| 4.482682e+02 -2.461203e+01| 0:0:00| chol  2  2
 8|0.299|0.605|4.6e-08|3.0e-04|4.7e+02| 4.019822e+02 -3.297467e+01| 0:0:00| chol  2  2
 9|0.392|0.863|3.3e-08|5.1e-05|3.9e+02| 3.418753e+02 -3.581213e+01| 0:0:00| chol  2  1
10|1.000|1.000|6.8e-09|6.0e-06|1.4e+02| 1.010245e+02 -3.652688e+01| 0:0:00| chol  2  2
11|0.833|0.851|1.4e-09|3.5e-06|4.2e+01| 9.055969e+00 -3.300638e+01| 0:0:00| chol  2  2
12|1.000|1.000|3.9e-11|1.5e-06|2.3e+01|-1.027302e+01 -3.267494e+01| 0:0:00| chol  2  2
13|0.963|0.914|3.3e-10|8.2e-07|2.0e+00|-2.981024e+01 -3.180155e+01| 0:0:00| chol  2  2
14|0.957|0.930|1.5e-10|4.1e-07|1.1e-01|-3.164862e+01 -3.173828e+01| 0:0:00| chol  2  2
15|0.944|0.849|7.4e-10|2.2e-07|2.4e-02|-3.173111e+01 -3.174325e+01| 0:0:00| chol  2  2
16|1.000|1.000|8.4e-10|9.4e-08|9.1e-03|-3.174509e+01 -3.174900e+01| 0:0:00| chol  2  2
17|1.000|1.000|8.2e-10|4.7e-08|8.9e-04|-3.175298e+01 -3.175128e+01| 0:0:00| chol  3  3
18|0.984|0.982|1.0e-08|8.9e-10|1.7e-05|-3.175380e+01 -3.175379e+01| 0:0:00| chol  5  6
19|1.000|0.990|1.8e-09|9.4e-12|4.5e-07|-3.175384e+01 -3.175383e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.17538355e+01
 dual   objective value = -3.17538349e+01
 gap := trace(XZ)       = 4.53e-07
```

```
 relative gap           = 7.03e-09
 actual relative gap    = -9.27e-09
 rel. primal infeas     = 1.80e-09
 rel. dual   infeas     = 9.35e-12
 norm(X), norm(y), norm(Z) = 5.5e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 3.0e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.11
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 5.5e-09  0.0e+00  1.3e-11  0.0e+00  -9.3e-09  7.0e-09
------------------------------------------------------------------

ans =

   31.7538

Epoch... 93
Epoch... 94

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.2e+00|2.5e+06| 3.868783e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.980|0.974|2.0e-02|2.6e-01|1.4e+05| 3.739092e+04  1.783532e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|3.9e+04| 2.393897e+04 -6.680108e+01| 0:0:00| chol  1  1
 3|1.000|0.998|2.3e-08|1.7e-02|2.1e+03| 1.451539e+03 -3.711780e+01| 0:0:00| chol  1  1
 4|1.000|0.727|1.9e-07|8.1e-03|1.2e+03| 9.592212e+02 -2.580908e+01| 0:0:00| chol  1  1
 5|0.569|0.973|8.4e-08|1.7e-03|7.9e+02| 7.102048e+02 -2.616757e+01| 0:0:00| chol  1  2
 6|0.565|0.559|4.3e-08|9.8e-04|5.9e+02| 5.166386e+02 -2.257276e+01| 0:0:00| chol  2  1
 7|0.341|0.333|5.5e-08|7.0e-04|5.3e+02| 4.486271e+02 -2.457684e+01| 0:0:00| chol  2  2
 8|0.304|0.602|4.5e-08|3.0e-04|4.7e+02| 4.019098e+02 -3.289350e+01| 0:0:00| chol  2  2
 9|0.390|0.853|3.3e-08|5.5e-05|3.9e+02| 3.426023e+02 -3.560543e+01| 0:0:00| chol  2  2
10|1.000|1.000|1.2e-10|6.0e-06|1.4e+02| 1.020786e+02 -3.642741e+01| 0:0:00| chol  2  2
11|0.830|0.848|2.8e-10|3.5e-06|4.3e+01| 9.693894e+00 -3.289423e+01| 0:0:00| chol  2  1
12|1.000|1.000|1.1e-10|1.5e-06|2.3e+01|-9.539003e+00 -3.252730e+01| 0:0:00| chol  2  2
13|0.962|0.904|2.6e-10|8.2e-07|2.0e+00|-2.969957e+01 -3.166231e+01| 0:0:00| chol  2  2
14|0.958|0.930|2.0e-10|4.1e-07|1.1e-01|-3.150683e+01 -3.159413e+01| 0:0:00| chol  2  2
15|0.939|0.853|6.7e-10|2.2e-07|2.4e-02|-3.158655e+01 -3.159876e+01| 0:0:00| chol  2  2
16|1.000|0.952|9.2e-10|1.0e-07|9.2e-03|-3.160031e+01 -3.160412e+01| 0:0:00| chol  2  2
17|1.000|1.000|1.9e-09|4.7e-08|2.1e-03|-3.160714e+01 -3.160668e+01| 0:0:00| chol  2  3
18|0.986|0.984|3.0e-09|8.3e-10|3.4e-05|-3.160913e+01 -3.160912e+01| 0:0:00| chol  4  4
19|1.000|0.990|1.6e-09|9.1e-12|6.2e-07|-3.160916e+01 -3.160916e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.16091592e+01
 dual   objective value = -3.16091583e+01
 gap := trace(XZ)       = 6.17e-07
```

```
 relative gap           = 9.60e-09
 actual relative gap    = -1.43e-08
 rel. primal infeas     = 1.56e-09
 rel. dual   infeas     = 9.08e-12
 norm(X), norm(y), norm(Z) = 5.4e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 3.0e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 4.8e-09  0.0e+00  1.3e-11  0.0e+00  -1.4e-08  9.6e-09
------------------------------------------------------------------

ans =

   31.6092

Epoch... 95
Epoch... 96

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.2e+00|2.5e+06| 3.886082e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.980|0.974|2.0e-02|2.6e-01|1.4e+05| 3.756325e+04  1.795111e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|3.9e+04| 2.404684e+04 -6.700352e+01| 0:0:00| chol  1  1
 3|1.000|0.998|2.3e-08|1.7e-02|2.2e+03| 1.458104e+03 -3.714963e+01| 0:0:00| chol  1  1
 4|1.000|0.728|1.9e-07|8.1e-03|1.2e+03| 9.625265e+02 -2.580888e+01| 0:0:00| chol  1  1
 5|0.571|0.973|8.3e-08|1.7e-03|7.9e+02| 7.099351e+02 -2.619162e+01| 0:0:00| chol  1  2
 6|0.558|0.552|4.3e-08|9.9e-04|5.9e+02| 5.189395e+02 -2.256698e+01| 0:0:00| chol  2  2
 7|0.346|0.336|5.5e-08|7.0e-04|5.3e+02| 4.497298e+02 -2.454115e+01| 0:0:00| chol  2  2
 8|0.303|0.603|4.5e-08|3.0e-04|4.7e+02| 4.032742e+02 -3.288580e+01| 0:0:00| chol  1  1
 9|0.390|0.847|3.2e-08|5.7e-05|3.9e+02| 3.441316e+02 -3.546570e+01| 0:0:00| chol  2  1
10|1.000|1.000|2.4e-09|6.0e-06|1.4e+02| 1.029474e+02 -3.633535e+01| 0:0:00| chol  2  2
11|0.828|0.845|5.5e-10|3.5e-06|4.3e+01| 1.024546e+01 -3.278920e+01| 0:0:00| chol  2  2
12|1.000|1.000|6.2e-11|1.5e-06|2.4e+01|-8.902104e+00 -3.238461e+01| 0:0:00| chol  2  2
13|0.963|0.896|2.4e-10|8.3e-07|2.0e+00|-2.958833e+01 -3.152688e+01| 0:0:00| chol  2  2
14|0.960|0.931|1.1e-10|4.1e-07|1.1e-01|-3.136987e+01 -3.145431e+01| 0:0:00| chol  2  2
15|0.934|0.859|6.2e-10|2.2e-07|2.3e-02|-3.144771e+01 -3.145868e+01| 0:0:00| chol  2  2
16|1.000|0.925|9.0e-10|1.0e-07|8.7e-03|-3.146065e+01 -3.146379e+01| 0:0:00| chol  2  2
17|1.000|1.000|2.2e-09|4.7e-08|2.2e-03|-3.146679e+01 -3.146649e+01| 0:0:00| chol  2  2
18|0.986|0.983|9.1e-09|8.6e-10|3.6e-05|-3.146890e+01 -3.146889e+01| 0:0:00| chol  4  4
19|1.000|0.990|8.5e-10|9.6e-12|7.7e-07|-3.146893e+01 -3.146893e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.14689345e+01
 dual   objective value = -3.14689333e+01
 gap := trace(XZ)       = 7.70e-07
```

```
 relative gap           = 1.20e-08
 actual relative gap    = -1.90e-08
 rel. primal infeas     = 8.45e-10
 rel. dual   infeas     = 9.61e-12
 norm(X), norm(y), norm(Z) = 5.3e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 3.0e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.16
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 2.6e-09  0.0e+00  1.3e-11  0.0e+00  -1.9e-08  1.2e-08
------------------------------------------------------------------

ans =

   31.4689

Epoch... 97
Epoch... 98

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.2e+00|2.5e+06| 3.888547e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.980|0.974|2.0e-02|2.6e-01|1.4e+05| 3.759443e+04  1.804990e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.3e-07|5.5e-02|3.9e+04| 2.409219e+04 -6.717000e+01| 0:0:00| chol  1  1
 3|1.000|0.998|2.4e-08|1.7e-02|2.2e+03| 1.460897e+03 -3.717308e+01| 0:0:00| chol  1  1
 4|1.000|0.727|1.9e-07|8.1e-03|1.2e+03| 9.638655e+02 -2.581579e+01| 0:0:00| chol  1  1
 5|0.571|0.972|8.3e-08|1.7e-03|7.9e+02| 7.096235e+02 -2.622703e+01| 0:0:00| chol  1  2
 6|0.554|0.548|4.3e-08|1.0e-03|6.0e+02| 5.202413e+02 -2.256792e+01| 0:0:00| chol  2  2
 7|0.351|0.337|5.4e-08|7.1e-04|5.3e+02| 4.499477e+02 -2.451364e+01| 0:0:00| chol  2  2
 8|0.308|0.600|4.4e-08|3.1e-04|4.7e+02| 4.029372e+02 -3.280969e+01| 0:0:00| chol  2  2
 9|0.388|0.839|3.2e-08|5.9e-05|3.9e+02| 3.444036e+02 -3.528483e+01| 0:0:00| chol  1  1
10|1.000|1.000|5.5e-09|6.0e-06|1.4e+02| 1.038755e+02 -3.623502e+01| 0:0:00| chol  2  2
11|0.825|0.842|1.0e-09|3.5e-06|4.4e+01| 1.074353e+01 -3.268257e+01| 0:0:00| chol  2  1
12|1.000|1.000|7.5e-11|1.5e-06|2.4e+01|-8.295145e+00 -3.224234e+01| 0:0:00| chol  2  2
13|0.963|0.888|3.6e-10|8.4e-07|2.0e+00|-2.948882e+01 -3.139478e+01| 0:0:00| chol  2  2
14|0.961|0.924|1.4e-10|4.1e-07|1.0e-01|-3.123596e+01 -3.131814e+01| 0:0:00| chol  2  2
15|0.929|0.873|6.6e-10|2.2e-07|2.1e-02|-3.131210e+01 -3.132171e+01| 0:0:00| chol  2  2
16|1.000|0.894|1.8e-09|1.1e-07|8.2e-03|-3.132390e+01 -3.132646e+01| 0:0:00| chol  2  2
17|1.000|1.000|1.6e-09|4.7e-08|2.4e-03|-3.132938e+01 -3.132931e+01| 0:0:00| chol  2  3
18|0.983|0.979|4.6e-09|1.1e-09|4.7e-05|-3.133168e+01 -3.133166e+01| 0:0:00| chol  4  4
19|1.000|0.990|7.6e-10|1.5e-11|2.8e-06|-3.133171e+01 -3.133171e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.13317098e+01
 dual   objective value = -3.13317111e+01
 gap := trace(XZ)       = 2.78e-06
```

```
 relative gap           = 4.36e-08
 actual relative gap    = 1.95e-08
 rel. primal infeas     = 7.59e-10
 rel. dual   infeas     = 1.50e-11
 norm(X), norm(y), norm(Z) = 5.3e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 3.0e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 2.3e-09  0.0e+00  2.1e-11  0.0e+00  1.9e-08  4.4e-08
------------------------------------------------------------------

ans =

   31.3317

Epoch... 99
Epoch... 100

 num. of constraints = 33
 dim. of socp   var  = 34,   num. of socp blk  =  1
 dim. of linear var  = 272
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|1.0e+00|6.2e+00|2.5e+06| 3.897395e+04  0.000000e+00| 0:0:00| chol  1  1
 1|0.980|0.974|2.0e-02|2.7e-01|1.4e+05| 3.768589e+04  1.815028e+01| 0:0:00| chol  1  1
 2|1.000|1.000|2.2e-07|5.5e-02|3.9e+04| 2.417306e+04 -6.739710e+01| 0:0:00| chol  1  1
 3|1.000|0.998|2.4e-08|1.7e-02|2.2e+03| 1.465820e+03 -3.722239e+01| 0:0:00| chol  1  1
 4|1.000|0.726|1.9e-07|8.1e-03|1.2e+03| 9.664386e+02 -2.583301e+01| 0:0:00| chol  1  1
 5|0.571|0.972|8.2e-08|1.7e-03|7.9e+02| 7.097120e+02 -2.626967e+01| 0:0:00| chol  2  2
 6|0.549|0.543|4.4e-08|1.0e-03|6.0e+02| 5.220441e+02 -2.257403e+01| 0:0:00| chol  2  1
 7|0.356|0.339|5.4e-08|7.1e-04|5.3e+02| 4.505620e+02 -2.449225e+01| 0:0:00| chol  2  1
 8|0.312|0.598|4.4e-08|3.1e-04|4.7e+02| 4.030665e+02 -3.275872e+01| 0:0:00| chol  1  1
 9|0.387|0.833|3.2e-08|6.2e-05|3.9e+02| 3.449664e+02 -3.512585e+01| 0:0:00| chol  2  2
10|1.000|1.000|1.3e-10|6.0e-06|1.4e+02| 1.048725e+02 -3.614233e+01| 0:0:00| chol  2  2
11|0.822|0.839|3.7e-10|3.5e-06|4.4e+01| 1.120855e+01 -3.258243e+01| 0:0:00| chol  2  2
12|1.000|1.000|6.7e-11|1.5e-06|2.5e+01|-7.722309e+00 -3.210345e+01| 0:0:00| chol  2  2
13|0.960|0.881|3.5e-10|8.4e-07|2.0e+00|-2.930447e+01 -3.126606e+01| 0:0:00| chol  2  2
14|0.962|0.915|1.6e-10|4.2e-07|1.1e-01|-3.110175e+01 -3.118577e+01| 0:0:00| chol  2  2
15|0.919|0.886|6.4e-10|2.1e-07|1.9e-02|-3.118045e+01 -3.118835e+01| 0:0:00| chol  2  2
16|1.000|0.865|8.5e-10|1.1e-07|7.7e-03|-3.119089e+01 -3.119282e+01| 0:0:00| chol  2  2
17|1.000|1.000|2.1e-09|4.7e-08|2.4e-03|-3.119588e+01 -3.119579e+01| 0:0:00| chol  2  2
18|0.985|0.980|1.4e-08|1.0e-09|4.2e-05|-3.119813e+01 -3.119812e+01| 0:0:00| chol  4  4
19|1.000|0.990|7.6e-10|1.3e-11|1.8e-06|-3.119816e+01 -3.119816e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 19
 primal objective value = -3.11981609e+01
 dual   objective value = -3.11981621e+01
 gap := trace(XZ)       = 1.78e-06
```

```
 relative gap           = 2.81e-08
 actual relative gap    = 1.93e-08
 rel. primal infeas     = 7.55e-10
 rel. dual   infeas     = 1.28e-11
 norm(X), norm(y), norm(Z) = 5.2e+03, 9.1e+01, 5.8e+01
 norm(A), norm(b), norm(C) = 3.0e+02, 1.2e+03, 7.5e+01
 Total CPU time (secs)  = 0.12
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 2.3e-09  0.0e+00  1.8e-11  0.0e+00  1.9e-08  2.8e-08
------------------------------------------------------------------

ans =

   31.1982

>>
```