% problem 3.11(c)

A = [1 0;0 -1;-1 1];

b = [3; 0; 1.7];

H = [5 4;4 5];

p = [-34; -38];

cvx\_begin

variable X(2,1);

minimize(X'\*H\*X+X'\*p+74)

subject to

A\*X <= b;

cvx\_end

>> a6\_3\_11\_c

警告: A non-empty cvx problem already exists in this scope.

It is being overwritten.

> In cvxprob (line 28)

In cvx\_begin (line 41)

In a6\_3\_11\_c (line 7)

Calling SDPT3 4.0: 7 variables, 3 equality constraints

For improved efficiency, SDPT3 is solving the dual problem.

------------------------------------------------------------

num. of constraints = 3

dim. of socp var = 4, num. of socp blk = 1

dim. of linear var = 3

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SDPT3: Infeasible path-following algorithms

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

version predcorr gam expon scale\_data

NT 1 0.000 1 0

it pstep dstep pinfeas dinfeas gap prim-obj dual-obj cputime

-------------------------------------------------------------------

0|0.000|0.000|1.1e+00|2.4e+00|1.0e+03| 1.315066e+02 0.000000e+00| 0:0:00| chol 1 1

1|0.799|0.801|2.2e-01|5.0e-01|2.5e+02| 5.651837e+01 4.197401e+00| 0:0:00| chol 1 1

2|0.973|0.977|6.1e-03|1.4e-02|6.6e+01| 2.576591e+01 -3.421416e+01| 0:0:00| chol 1 1

3|0.951|0.929|3.0e-04|2.5e-03|4.3e+00|-3.025631e+01 -3.389872e+01| 0:0:00| chol 1 1

4|1.000|0.720|5.6e-07|7.8e-04|9.9e-01|-3.241617e+01 -3.321973e+01| 0:0:00| chol 1 1

5|0.769|1.000|1.7e-07|3.1e-06|3.6e-01|-3.283336e+01 -3.319235e+01| 0:0:00| chol 1 1

6|1.000|0.886|1.9e-08|6.6e-07|5.5e-02|-3.301505e+01 -3.306952e+01| 0:0:00| chol 1 1

7|0.890|1.000|4.5e-09|3.4e-08|1.3e-02|-3.303758e+01 -3.305080e+01| 0:0:00| chol 1 1

8|0.984|0.978|4.1e-10|4.6e-09|2.5e-04|-3.304487e+01 -3.304512e+01| 0:0:00| chol 1 1

9|0.986|0.966|8.5e-12|2.4e-10|6.0e-06|-3.304500e+01 -3.304500e+01| 0:0:00| chol 1 1

10|1.000|0.953|5.4e-13|1.3e-11|6.1e-07|-3.304500e+01 -3.304500e+01| 0:0:00|

stop: max(relative gap, infeasibilities) < 1.49e-08

-------------------------------------------------------------------

number of iterations = 10

primal objective value = -3.30449996e+01

dual objective value = -3.30450002e+01

gap := trace(XZ) = 6.14e-07

relative gap = 9.16e-09

actual relative gap = 9.10e-09

rel. primal infeas (scaled problem) = 5.36e-13

rel. dual " " " = 1.29e-11

rel. primal infeas (unscaled problem) = 0.00e+00

rel. dual " " " = 0.00e+00

norm(X), norm(y), norm(Z) = 1.1e+02, 8.5e+00, 1.2e+01

norm(A), norm(b), norm(C) = 3.8e+00, 5.3e+01, 6.7e+00

Total CPU time (secs) = 0.12

CPU time per iteration = 0.01

termination code = 0

DIMACS: 7.3e-13 0.0e+00 1.5e-11 0.0e+00 9.1e-09 9.2e-09

-------------------------------------------------------------------

------------------------------------------------------------

Status: Solved

Optimal value (cvx\_optval): +0.0450002