

Homework 3

1. Read Chapter 5.1 - I did it!
2. Look at help sparse on MATLAB- I did it!

9.

The size of V	1313793 x 1
The size of S	263169 x 263169
The number of nonzero entries in S	1313793
The ratio of nonzero entries vs others in S	1.896956985452251e-05
The memory used by V (megabytes)	31.531032
The memory used by S (megabytes)	31.531032
The memory needed for S_f (megabytes)	516000
The value of S(77690, 3170)	0
The value of S(53700, 53187)	-1

No, you can't create matrix S_f on our home computers

10.

a.)

$l_{3,1}$	-4.000000000000000e-01
$u_{2,5}$	-2.000000000000000e-01
y_1	5
x_2	7.494221148870107e+00

b.)

$l_{4,3}$	-3.809523809523811e-02
$u_{3,5}$	-1.739130434782609e-02
y_2	2
x_3	6.435397619458341e+00
$P_{3,2}$	0

c.) LU Total Pivoting

$L_{7,5}$	0
$U_{8,9}$	0
$P_{6,3}$	0
$Q_{5,7}$	0
y_4	1
x_5	1.784338368778597e+00

d.) Cholesky

$L_{9,6}$	-3.868810756585567e-03
Y_5	1.299900173855744e+00
X_6	1.770332766537701e+00