



भारतीय प्रौद्योगिकी संस्थान गुवाहाटी  
INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

# MA 423: Matrix Computations Lab

## Lab 05

---

AB Satyaprakash (180123062)

01 Oct 2021

## Question 1,2,3.

The function programs have been written as required.

## Question 4.

The workspace files have been saved as Q4-1.mat, Q4-2.mat, and Q4-3.mat

The following table records the departure from orthonormality for the isometries obtained from each of the processes and also mentions the condition numbers.

Method	Condition Number	Departure from Orthogonality
-----	-----	-----
{'CGS' }	1.000000000000000e+05	1.07507922129257e-07
{'MGS' }	1.000000000000000e+05	2.71690256906966e-12
{'CGSREP' }	1.000000000000000e+05	6.95533361388380e-16
{'Matlab Command' }	1.000000000000000e+05	1.17389199585967e-15
{'CGS' }	1.000000000000000e+07	7.83151502108883e-03
{'MGS' }	1.000000000000000e+07	3.61206293277039e-10
{'CGSREP' }	1.000000000000000e+07	7.37529177124753e-16
{'Matlab Command' }	1.000000000000000e+07	1.32445767330273e-15
{'CGS' }	1.000000000000000e+11	1.57759689318539e+01
{'MGS' }	1.000000000000000e+11	4.37004207709368e-06
{'CGSREP' }	1.000000000000000e+11	7.68092211496915e-16
{'Matlab Command' }	1.000000000000000e+11	1.21218685089575e-15