Student name:_____ Group:_____

Sample Midterm

Time allowed: 60 minutes

1. Describe all the stages of a GQM
2. Consider the following two sequences (in case of computational overhead, you can approximate at the first decimal digit):

f	g
1	1
2	30
3	2
4	4
5	6

   a. Compute their:
      i. covariance
      ii. Pearson's correlation coefficient
      iii. complete correlation (with 0 padding when and if needed)
   b. Apply a median filter of size 3 (with 0 padding when and if needed) to each of the sequences and recompute
      i. covariance
      ii. Pearson's correlation coefficient
      iii. complete correlation (with 0 padding when and if needed)
   c. Discuss the similarities and differences in the computations
3. Deduce the normal equation for multivariate linear regression
4. Write and prove the LLN