Assignment 1 - Common Mistakes

Question 1

Section A

- The test-set accuracy, in the described case, will not reflect the model generalization power. This is because the test samples that belong to an artist that its songs already appear in the trainset considered as ones the network already "learned" about due to shared features. -1

Section B

- Lacking: When checking the performance of a model, we are not supposed to use any knowledge of the test-set, since we assume we do not have any access to it, nor its statistics. An extreme example can be a test-set consist of only one sample, and obviously its statistics cannot be extracted. -1

Section C

- Lacking: The validation set is used to evaluate the performance of the model for different combinations of hyperparameter values and avoiding over-fitting. -2
- Lacking: The test set is used for different models' architectures comparisons, basing the comparisons on data that was not used by any model, in any part of the model building process. -2

Question 2

Section C

- Substantial gaps between the analytical and approximated results. -2

Section D

- W is not supposed to be composed of equal entries as it resembles a vector of weights (that in general are not all identical). -2
- W is a scalar instead of a vector. -2
- Substantial gaps between analytical and approximated results. -2
- The analytical and approximated results are not printed. -3

Section F, G

- No plots demonstrating the requested behavior are presented. -3

Section I

- Too low accuracy compared to the one obtained via sklearn library. -2