Channel Processing System

To understand the performance of the car, a channel processing system to augment the measured data and to calculate metrics is required. The system will have a mechanism for reading and writing channels and metrics, and a mechanism for reading parameters. The functions that will process the channel data have the form outputs = function (parameters, inputs).

The functions for this example are given below:

Function 1:

Function 2:

Function 3:

Function 4:

Channels are arrays of data and are denoted with a capital letter, e.g. Y. Metrics and parameters are scalars and are denoted with a lowercase letter, e.g. m. Note that b is the only metric in the above example. X, m and c are known.

1. Develop a flexible and generic application for processing channel data using the functions above. Your application should demonstrate the software engineering traits we care about:

* Readability - clear and concise code.
* Extensibility - easily extended for additional inputs and functions.
* Testability - low complexity, high cohesion, easily tested.

1. Using your application, from the channels.txt and parameters.txt files provided, can you calculate the value of metric b?

Please zip up your submission and include instructions on how to run it and any tests you have provided.