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. Can you design and implement a flexible and generic system for processing channel data using the above functions? Feel free to use a language of your choice.
2. From the channels.txt and parameters.txt files provided, what is the value of the metric b?