GA Assignment 1

Determine the input data requirements of the following hydraulic network components:

pipe
pump
tank

GA Assignment 2

Each item in the list below describes why a hydraulic network model may not match the field data except for one reason. Which one?

input data errors
system demand errors
skeletonization errors
outdated pump characteristics curves
unsuspected cross connections
wrongly assumed valve status
by-pass valves left open
model software type
valves between pressure zones left open or leaking
unexpectedly low demands from large consumers

GA Assignment 3

Assign each head type below to the correct Bernoulli equation term:

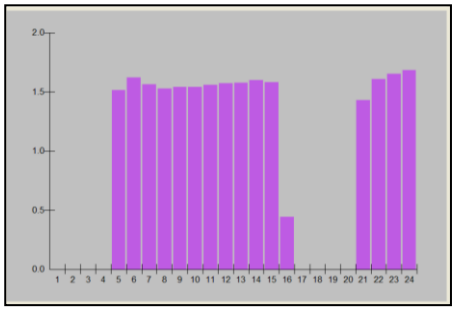
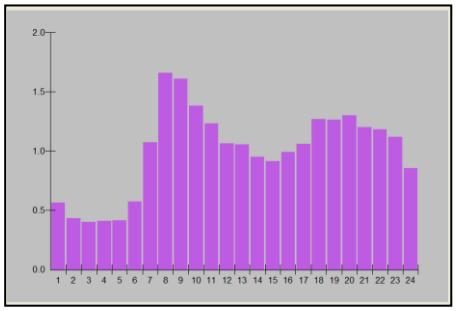
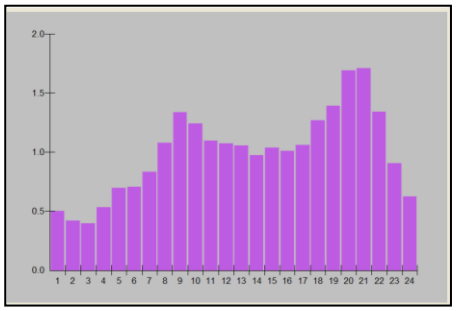
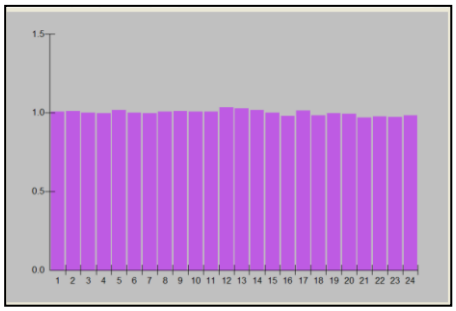
Total head
Pressure head
Velocity head
Elevation head
Piezometric head

Head (m)	Bernoulli Equation Term	Grade Line and Position
	Z	Between datum and pipe centerline
	$p / \rho g$	Between pipe centerline and HGL
	$u^2 / 2g$	Between HGL and EGL
	$Z + p / \rho g$	Between datum and HGL
	h	Between datum and EGL

GA Assignment 4

Determine for each pattern figure below the corresponding water consumption type:

Industrial
Residential Winter
Residential Summer
Export

GA Assignment 5

When a valve closes too rapidly, it can lead to pressure fluctuations. How would you prevent such fluctuations from occurring?

GA Assignment 6

The following are short True/False questions.

SCADA systems remotely control pump stations.
Scada is based on a pre-defined binary file format.
Cavitation can occur during a period of transient operation.
Electric power failure of a pump station may result in column separation.