

Homework 18 Special Problem

Water at 20 °C flows through three horizontal cast-iron pipelines that have the following properties:

Pipeline	Length (m)	Diameter (m)	Fittings ΣK
1	800	0.12	25.4
2	600	0.08	19.1
3	900	0.10	30.6

(a) Find the flow rate for the case where the pipelines are connected in series with a total pressure drop of 115 kPa

(b) Find the flow rate through each pipeline and the pressure drop across the system for the case where the pipelines are connected in parallel with a total flow rate of 85 m³/hr.