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Lab 7
Engr 115

Input Parameter
Surface area lake (m^2)
Evaporation(inch/dec)

Ping Pong Floating										
Inflow Method 1	Depth(cm)	Depth(m)	Width(ft)	Width(m)	Length(ft)	Length(m)	Volume(m^3)	Time (s)	Time(hr)	Flowrate (m)
Trial 1	4.5	0.045	1.7	0.52	7	2.1	0.05	8.72	0.0024	20.6
Trial 2	4.5	0.045	1.7	0.52	7	2.1	0.05	8.75	0.0024	20.6
Trial 3	4.5	0.045	1.7	0.52	7	2.1	0.05	8.81	0.0024	20.4
									Ave Flowrate	20.5

Velocity Meter								
Inflow method 2	Depth (cm)	Depth (m)	Width (cm)	Width (m)	Cross area (m^2)	Meter Value (ft/s)	Meter Value(m/hr)	Flowrate(m^3/hr)
Trial 1	10.5	0.105	30	0.3	0.0315	0.8	877	27.63
Trial 2	6.5	0.065	61	0.61	0.0195	0.2	219	4.27
Trial 3	8.6	0.086	30	0.3	0.0258	0.8	877	22.63
							ave flow rate	18.17

Bucket Test									
Outflow Method 3	Depth(cm)	Depth(m)	Radius (cm)	Radius (m)	Area of Bucket (m^2)	Volume (m^3)	Time (s)	Time (hr)	Flowrate (m^3/hr)
Trial 1	6	0.06	14.5	0.145	0.066	0.0040	20	0.0055	0.720
Trial 2	5.5	0.055				0.0036	20	0.0055	0.660
Trial 3	4.5	0.045				0.0030	20	0.0055	0.540
								ave flow rate	0.640

Results						
Total Inflow	Flow Rate (m^3/hr)	Evaporation	Surface Area(m^2)	in/decade	m/hr	m^3/hr
Method 1	20.5		8000	2.26	6.55E-07	0.00524
Method 2	18.17					
ave inflow	19.34					
Total Inflow	19.34					

Total Outflow	Flow Rate (m^3/hr)
Method 3	0.64
Evaporation	0.0052
Total Outflow	0.6452

Rate of Volume Change	m^3/hr
	18.69

Rate of Depth Change	m/hr	cm/hr
	0.002336845	0.23368447

The lake is filling at a rate of

Is Fern lake in steady state? Not in a steady state because the