Fluids Lab 1: Fluid Properties

Part 1

Density

Hydrometer Reading

	Trial	Temp (*C)	Mass of Beaker	Beaker + Fluid	volume	Density, ρ	Specific Gravity
Water	1	*20*	*76.68 g*	*120 g*	*43 ml*		*1.00*
	2	*20*	*76.68 g*	*120.63 g*	*44 ml*		*1.00*
	3	*20*	*76.68 g*	*131.81 g*	*58 ml*		*1.00*
	4	*20*	*76.68 g*	*136.89 g*	*60 ml*		*1.00*
	5	*20*	*76.68 g*	*147.83 g*	*70 ml*		*1.00*
Salt Water	1	*19*	*77.51 g*	*107.7 g*	*30 ml*		*1.02*
	2	*19*	*77.51 g*	*123.38 g*	*45 ml*		*1.02*
	3	*19*	*77.51 g*	*134.15 g*	*56 ml*		*1.02*
	4	*19*	*77.51 g*	*144.56 g*	*67 ml*		*1.02*
	5	*19*	*77.51 g*	*162.43 g*	*84 ml*		*1.02*
Glycerin	1	*20*	*77.73 g*	*100.97 g*	*19 ml*		*1.24*
	2	*20*	*77.73 g*	*117.56 g*	*25 ml*		*1.24*
	3	*20*	*77.73 g*	*122.74 g*	*33 ml*		*1.26*
	4	*20*	*77.73 g*	*135.23 g*	*41 ml*		*1.25*
	5	*20*	*77.73 g*	*137.72 g*	*44 ml*		*1.26*

Part 2

	$d_{steel\ ball}$	σ, density of sphere	Δ V	$d_{graduated\ cylinder}$	L	t1 *(seconds)*	t2 *(seconds)*	v, viscosity	Density of Fluid, ρ	μ
Team 1	5/32"		*400 ml*	*60 mm*		*7.03*	*7.64*			
	1/16"		*400 ml*	*60 mm*		*33.68*	*33.44*			
Team 2	3/32"		*400 ml*	*60 mm*		*11.18*	*11.22*			
	1/8"		*400 ml*	*60 mm*		*23.31*	*23.16*			
Team 3	5/32"		*400 ml*	*60 mm*		*7.79*	*7.4*			
	1/16"		*400 ml*	*60 mm*		*32.78*	*32.72*			
Team 4	3/32"		*400 ml*	*60 mm*		*11.26*	*11.28*			
	1/8"		*400 ml*	*60 mm*		*17.84*	*17.88*			
Team 5	5/32"		*400 ml*	*60 mm*		*8.53*	*8.31*			
	1/16"		*400 ml*	*60 mm*		*48.48*	*48.34*			

In Your Handout

Hint: $\Delta V = L*(\pi d^2/4)$