PHYSICS 535/3&4 PRACTICE TABLES

SOLUTIONS

Table 1

l (cm)	θ (^{o})	α (^{o})	$\sin\theta$	$\log l$	$\cos\alpha$	$\tan\theta$
10.0	6	20	0.105	1.000	0.940	0.105
20.0	10	30	0.174	1.301	0.866	0.176
30.0	12	40	0.208	1.477	0.766	0.213
40.0	22	50	0.375	1.602	0.643	0.404
50.0	37	60	0.602	1.699	0.500	0.754
60.0	42	70	0.669	1.778	0.342	0.900

NOTE: Trigonometric functions, roots and logarithms are written to 3dps.

Table 2

x (m)	i (^{o})	$\sin i$	$\tan i$	$x\sin i$
0.10	10	0.174	0.176	0.02
0.15	20	0.342	0.364	0.05
0.20	30	0.500	0.577	0.10
0.25	40	0.643	0.839	0.16
0.30	50	0.766	1.192	0.23
0.35	60	0.866	1.732	0.30

Table 3 (Take f **= 0.200m**)

y (m)	x (cm)	x (m)	$fx(m^2)$	$\frac{x}{y}$	$\frac{fx}{y}$(m)
0.05	25.1	0.251	0.050	5.0	1.00
0.10	30.0	0.300	0.060	3.0	0.60
0.15	37.0	0.370	0.074	2.5	0.49
0.20	44.0	0.440	0.088	2.2	0.44
0.25	52.2	0.522	0.104	2.1	0.42
0.30	61.0	0.610	0.122	2.0	0.41

Table 4

***U* (cm)**	**V (cm)**	**(U + V) (cm)**	**(V – U) (cm)**
5.0	89.5	**94.5 (1 d.p)**	**84.5 (1 d.p)**
10.0	78.2	88.2	68.2
15.0	66.5	81.5	51.5
20.0	52.8	72.8	32.8
25.0	47.3	72.3	22.3
30.0	30.7	60.7	0.7

Table 5

x (cm)	**V (v)**	**I (A)**	$\frac{\mathbf{1}}{\boldsymbol{x}}$ **(cm^{-1})**	$\frac{\boldsymbol{V}}{\boldsymbol{I}}$ **(Ω)**
10	0.50	0.40	0.100	1.3
15	0.60	0.36	0.067	1.7
20	0.70	0.32	0.050	2.2
25	0.80	0.28	0.040	2.9
30	0.90	0.24	0.033	3.8
42	1.00	0.20	0.024 **(2.s.fs & 3 d.ps)**	5.0 **(2s.fs & 1.dp)**

(3 d.ps) ***(1 d.p)***

Tables 6 (where *t* is time for 20 oscillations)

***m* (kg)**	**t (s)**	**T**	$\frac{\mathbf{1}}{\mathbf{T}}$
0.100	27.00	1.350	0.7407
0.200	30.00	1.500	0.6667
0.300	33.00	1.650	0.6061
0.400	36.00	1.800	0.5556
0.500	38.00	1.900	0.5263
0.600	40.00	2.000	0.5000