Table 10.1

Average Room Temperature = 20 °C

B = 347 mm

Scale Readings (mm)		$h = Y - X$ (mm)	$L = B - X$ (mm)	$1/L$ (mm^{-1})
X	Y			
224	800	576	123	0.00813
217	720	503	130	0.00769
209	640	431	138	0.00725
199	560	361	148	0.00676
189	480	291	158	0.00633
178	400	222	169	0.00592
165	320	155	182	0.00549
150	240	90	197	0.00508

V. Data Analysis

1. Plot h versus $1/L$. Use the graph to find the value of the atmospheric pressure $P_a \pm \Delta P_a$ in units of mmHg.

.....

(P_a = 740 mmHg)

.....

.....

.....

2. With the value of the atmospheric pressure known, you can now calculate the pressure P of the trapped air for each value of h, using the relation: $P = P_a + h$. Calculate the quantity PL for each (h,L) pair and enter the values in Table 10.2 below:

$P_a = 7.40$

Table 10.2

L (mm)	h (mm)	$P = P_a + h$ (mmHg)	PL (mmHg . mm)
123	576	1316	$1.618 * 10^5$
130	503	1293	$1.615 * 10^5$
138	431	1171	$1.615 * 15^5$
148	361	1101	$1.629 * 10^5$
158	291	1031	$1.628 * 10^5$
169	222	962	$1.625 * 10^5$
182	155	895	$1.628 * 10^5$

3. Plot L versus $P = (P_a + h)$. What do you conclude from the graph?

P increas as L decreas

(inverse non Liner relationship)

4. Plot a third graph of L versus $P\,L$. What do you conclude?

PL is constant as L increas

→ and the result agree with Bayer's law