

15. by Langmuir adsorption isotherm expression.

$$\frac{P}{V} = \frac{P}{V_m} + \frac{1}{aV_m}$$

$P(\text{kPa})$	6.8	13.5	26.7	53.1	79.4
$V(\text{cm}^3/\text{g})$	74	111	147	177	189
$\frac{P}{V}$	0.092	0.122	0.182	0.300	0.420

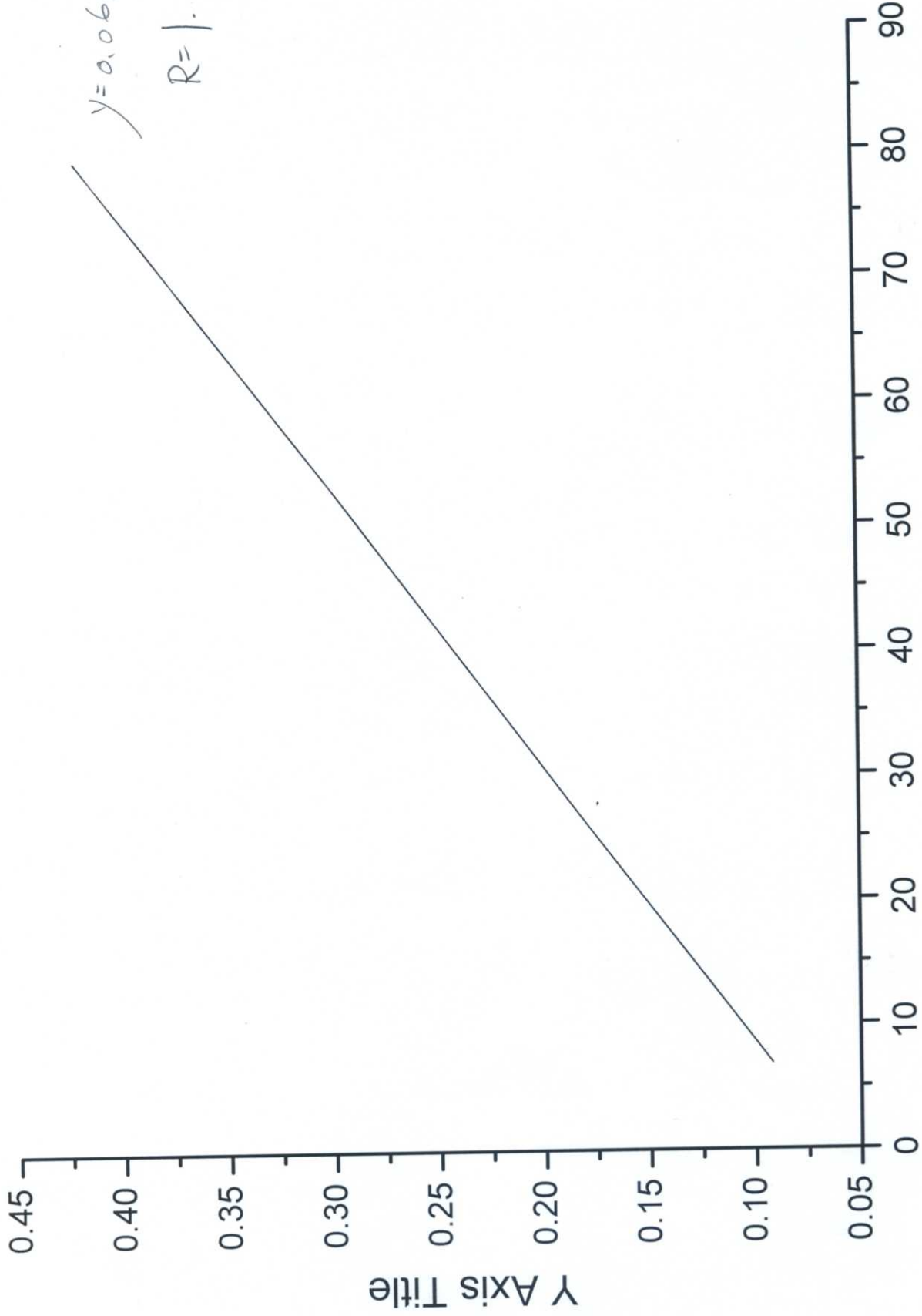
$$y = 0.0612 + 0.0045x$$

$$\frac{1}{V_m} = 0.0045 \Rightarrow V_m = \frac{1}{0.0045} = 222.2 \text{ cm}^3/\text{g}$$

$$\begin{aligned} \frac{1}{aV_m} = 0.0612 &\Rightarrow a = \frac{1}{222.22 \times 0.0612} = \frac{1}{13.6} = 0.0735 \frac{1}{\text{kPa}} \\ &= 7.35 \times 10^{-2} \frac{1}{\text{kPa}} \\ &= 7.35 \times 10^{-5} \frac{1}{\text{Pa}} \end{aligned}$$

$R=1 \Rightarrow$ fit Langmuir adsorption isotherm expression

B



$\frac{P}{V}$

X Axis Title P.