

EXP 8: half-life of a draining water column

$$\frac{dh}{dt} = -\lambda h(t)$$

$$\Rightarrow \int_{h_0}^{h(t)} \frac{dh}{h} = \int_0^t -\lambda dt$$

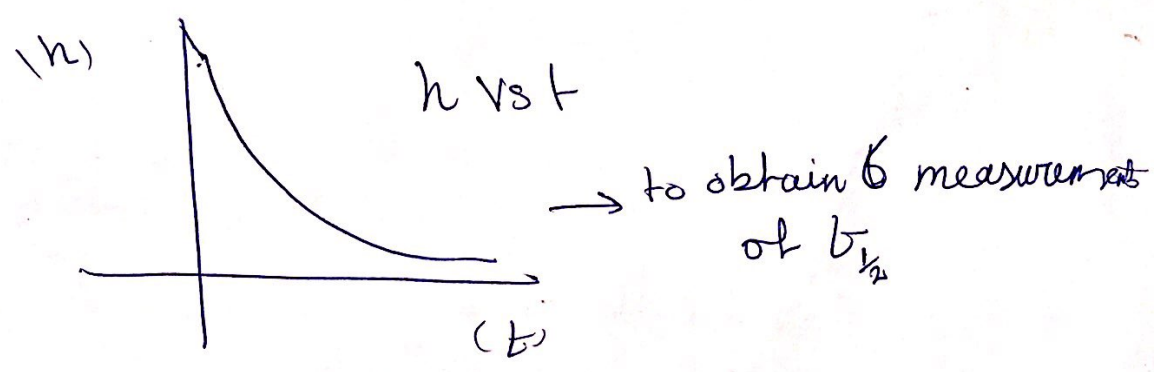
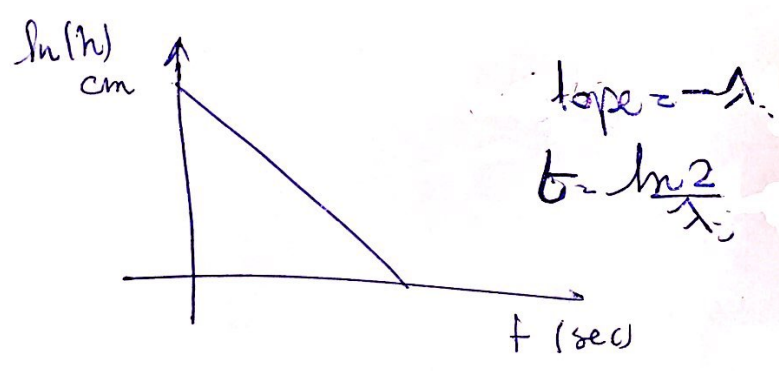
$$h(t) = h_0 e^{-\lambda t}$$

$h_0 = 50 \text{ units} + D$
in burette units

~~half slope~~

\Rightarrow when $t_{1/2} \Rightarrow \frac{h_0}{2} = h_0 e^{-\lambda t_{1/2}}$

$$\Rightarrow t_{1/2} = \frac{\ln 2}{\lambda}$$



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