

First Order reaction

$$\text{rate} = k[A]$$

$$\ln \left(\frac{[A]_t}{[A]_0} \right) = -kt \longrightarrow \ln[A]_t = -kt + \ln[A]_0$$
$$y = mx + b$$

plot $\ln[A]_t$ v.s. t linear

$$y = \ln[A]_t$$

$$x = t$$

$$m = -k$$

$$b = \ln[A]_0$$