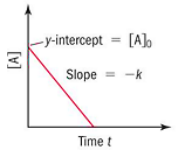
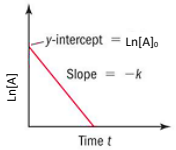
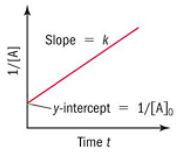
Kinetics Summary Glue In - *See Kinetics Reference Sheet for More Details*								
Differential Rate Law *Rate vs Concentration Data*			**Integrated Rate Law** *Graph the following versus time. The one that is linear tells you the order! Why? Because of Math. Ha!*					
Order	**Rate Law**	**Units on K**	**Memory Device**	**Y-axis**	**y = mx + b format**	**Straight Line Plot**	**k from Graph**	**Half Life Equation**
0th	k	M/sec	**C** *Concentration*	[A]	$[A]_t = -kt + [A]_0$		- slope	$t_{1/2} = \frac{[A]_0}{2k}$
1st	k [A]	1/sec	**N** *Natural Log*	Ln [A]	$Ln[A]_t = -kt + Ln[A]_0$		- slope	$t_{1/2} = \frac{0.693}{k}$
2nd	k [A]^2	1/M•sec	**R** *Reciprocal*	1/[A]	$\frac{1}{[A]_t} = kt + \frac{1}{[A]_0}$		slope	$t_{1/2} = \frac{1}{k\,[A]_0}$

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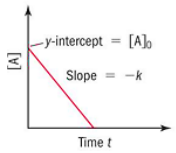
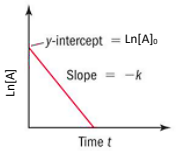
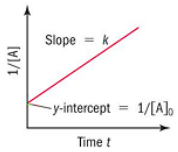
0th	k	M/sec	**C** *Concentration*	[A]	$[A]_t = -kt + [A]_0$		- slope	$t_{1/2} = \frac{[A]_0}{2k}$
1st	k [A]	1/sec	**N** *Natural Log*	Ln [A]	$Ln[A]_t = -kt + Ln[A]_0$		- slope	$t_{1/2} = \frac{0.693}{k}$
2nd	k [A]^2	1/M•sec	**R** *Reciprocal*	1/[A]	$\frac{1}{[A]_t} = kt + \frac{1}{[A]_0}$		slope	$t_{1/2} = \frac{1}{k\,[A]_0}$