

Noise Affects Worksheet

This worksheet shows a graph of concentration versus time for a first order reaction. The parameters defining the reaction rate are specified. One of the curves on the graph shows the theoretical behavior of concentration. The points show how an experiment would measure the concentration. You can input a value for "noise" (from 0 to whatever). The larger the noise value, the more the data will scatter from theory.

The graph also shows three straight line fits to the curves and data. The first line is the actual initial slope of the theoretical line. This is the true initial rate.

The second line shows the slope when fitting to the first two data points in the experimental data, and the third line fits to three data points.

Change the value of noise and watch how the lines to fit slopes deviate from the true slope (initial rate).

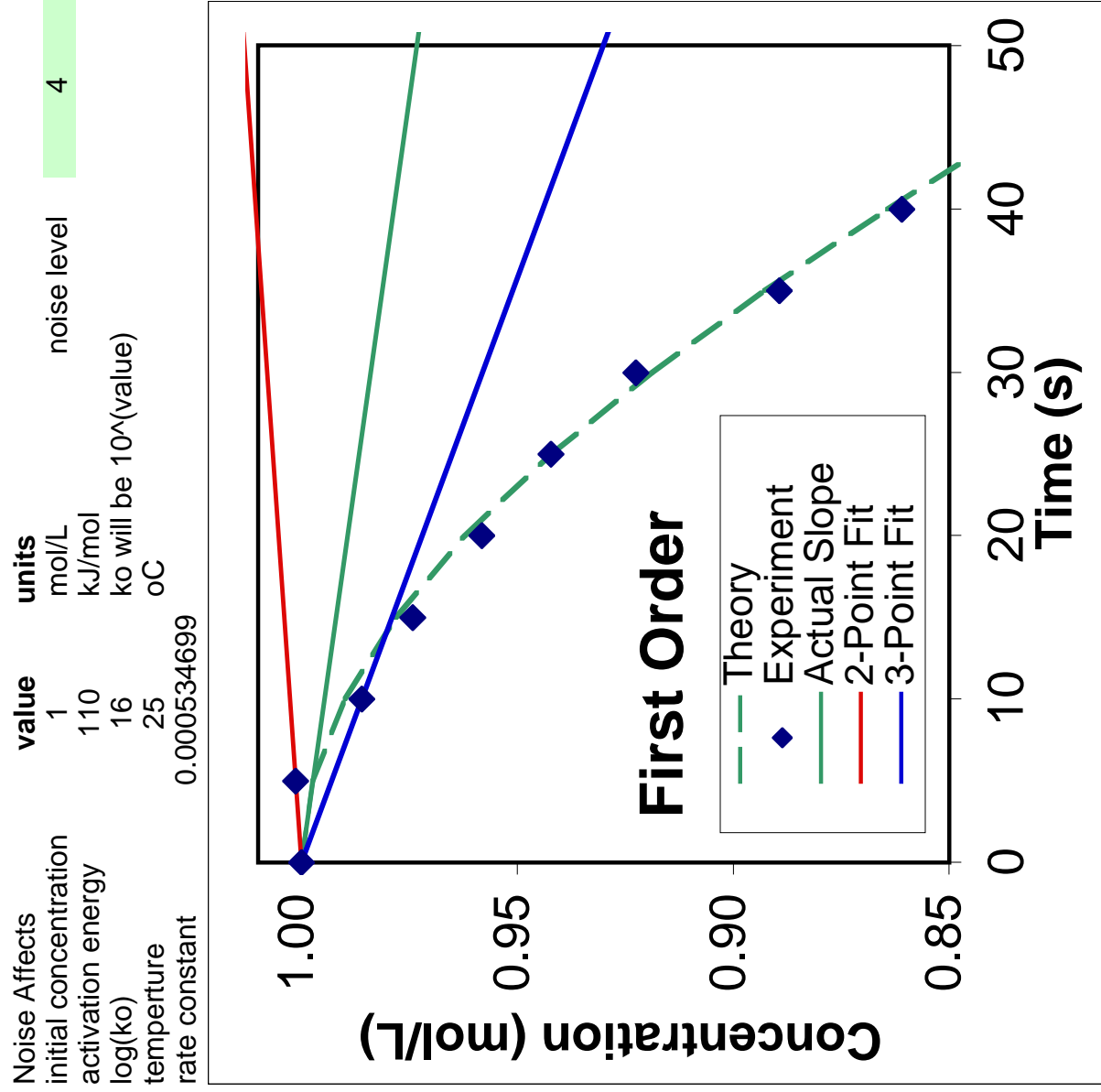
Orders Worksheet

This worksheet shows a graph of concentration versus time for four different reaction orders. You can input the activation energy, prefactor, and temperature to see how the curves change.

Note the similarity in shape of all four curves in the initial time period. We cannot distinguish reaction order very well from data showing the dependence of concentration with time. We **MUST** analyze the data carefully!

Data Worksheet

This worksheet stores the data. Nothing can be altered.



Orders	value	units
initial concentration	1	mol/L
activation energy	120	kJ/mol
log(ko)	18	ko will be 10 ^{^(value)}
temperature	25	oC
rate constant	0.000946497	

