





Name _____

Chem 1194: Kinetics Report
106

Date _____ Section _____

Reaction Orders from Relative Rates at Common Temperature

$$\frac{\text{Rate}_1}{\text{Rate}_2} = \text{_____} \quad \ln \frac{\text{Rate}_1}{\text{Rate}_2} = \text{_____} \quad \frac{\ln(\text{Rate}_1/\text{Rate}_2)}{\ln ([I_2]_1/[I_2]_2)} = \text{_____} \quad m = \text{_____}$$

$$\frac{\text{Rate}_1}{\text{Rate}_3} = \text{_____} \quad \ln \frac{\text{Rate}_1}{\text{Rate}_3} = \text{_____} \quad \frac{\ln(\text{Rate}_1/\text{Rate}_3)}{\ln ([\text{acet}]_1/[\text{acet}]_3)} = \text{_____} \quad n = \text{_____}$$

$$\frac{\text{Rate}_1}{\text{Rate}_4} = \text{_____} \quad \ln \frac{\text{Rate}_1}{\text{Rate}_4} = \text{_____} \quad \frac{\ln(\text{Rate}_1/\text{Rate}_4)}{\ln ([\text{HCl}]_1/[\text{HCl}]_4)} = \text{_____} \quad p = \text{_____}$$

Write the rate law: Rate = _____

Common Temperature Rate Constant

	Group 1	Group 2	Group 3	Group 4
Rate Constant, k (_____ unit)	_____	_____	_____	_____

Average rate constant, k

Sample calculation of the rate constant for your group

Submit a graph of ln time as a function of 1/T. (Your own - *not* a copy of your group's.)

On the graph, show the calculation of the slope of the straight line which best fits your group's data.
If you use Excel, report the trendline with units.

Calculate E_a from the slope and R (Show units.)