Name_____Section_____

Partner_____

CHM 115 Lab 13 Report Form
KINETICS

Concentration Effect

$[I^-]$ Effect:

Initial Concentrations in flask: $[S_2O_3^{2-}]$ _____ $[H_2O_2]$ _____

Flask	Initial $[I^-]$	Time of clock reaction in s	Rate
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____

Attach graph of ln (Rate) vs. ln $[I^-]$ Slope of best straight line _____

Order of reaction: with respect to I^- _____

$[H_2O_2]$ Effect:

Initial Concentrations in flask: $[S_2O_3^{2-}]$ _____ $[I^-]$ _____

Flask	Initial $[H_2O_2]$	Time of clock reaction in s	Rate
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____

Attach graph of ln (Rate) vs. ln $[H_2O_2]$ Slope of best straight line _____

Order of reaction with respect to H_2O_2 _____

Calculate Rate Constant (k) using the orders of the reaction determined above:

Flask #	1	2	3	4
$[I^-]$ Effect trials	_____	_____	_____	_____
$[H_2O_2]$ Effect trials	_____	_____	_____	_____

Average rate constant from all trials: _____

Temperature Effect

$\Delta[MnO_4^-]$ for each trial _____

Temperature (K)	1/Temp (K^{-1})	Δtime (s)	Rate (-1/2 $\Delta[MnO_4^-]/\Delta t$)	ln (Rate)	
_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	

Attach graph of ln (Rate) vs. 1/T and your sample calculations.

Slope of best straight line _____

Experimental activation energy _____