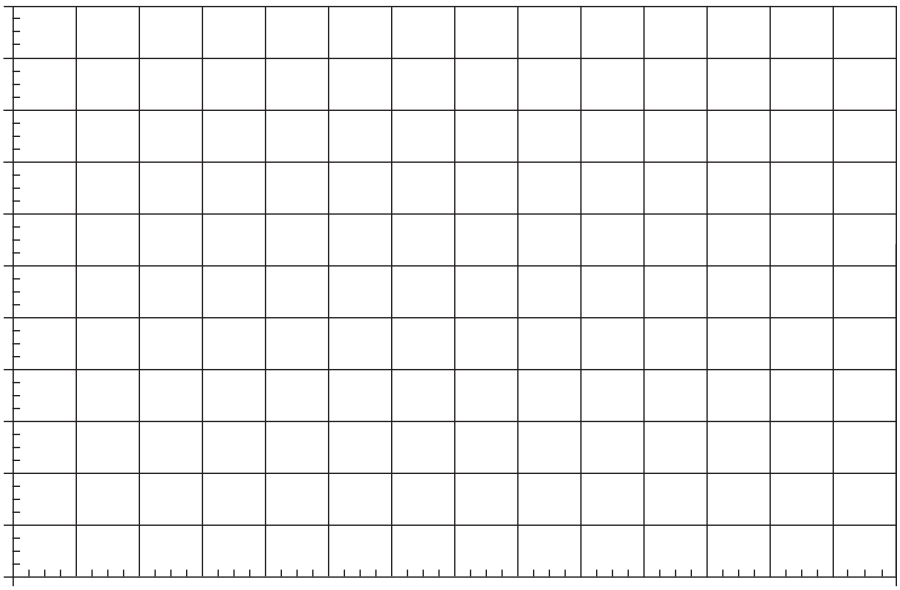
FLINN SCIENTIFIC

Name_____

Laboratory Report

Experiment	Solution A		Concentration of KIO_3	Reaction Time (sec)	Reaction Rate (sec^{-1})
	0.10 M KIO_3	Water			
1	40 mL	160 mL			
2	80 mL	120 mL			
3	20 mL	180 mL			
4					
Challenge!					

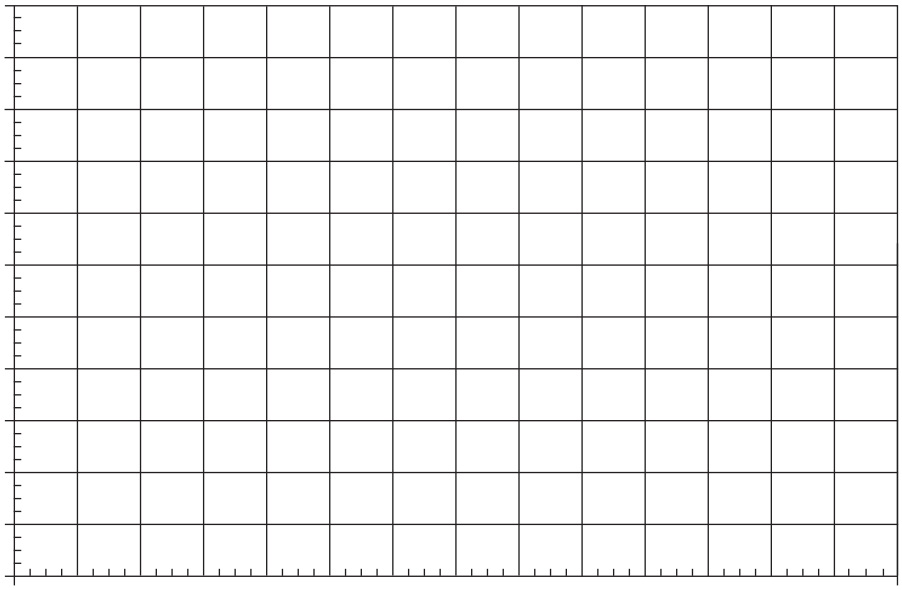
1. Plot the data from trials 1–3 to show how changing the volume of KIO_3 affects the reaction time. Draw a trendline through the data points and explain the shape of the graph.



2. Explain the effect of concentration on reaction rate in terms of collision theory: When the concentration of reactants increases, the reaction time _____, because increasing the _____ of molecules or ions in solution increases the frequency of _____ between them.

3. Calculate 1/time in sec^{-1} for each trial. This is the reaction rate—enter the results in the table.

4. Plot the **reaction rate** versus the volume of KIO_3 solution in Solution A for each trial. Draw a best-fit straight line through the data points and explain the shape of the graph.



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5. Which graph will probably give a more accurate prediction of the amount of KIO_3 solution needed to make the iodine clock "ring" in 25 seconds? Explain.

6. For the final challenge trial, how close did the actual reaction time come to the target time of 25 seconds? Discuss possible sources of error in the experiment and whether they would have led to longer or shorter reaction times.