

**CHEM361 activity → Enzyme Kinetics**

Time to unwrap a jolly rancher in the absence of running (with units) =

Concentration of Jolly Ranchers (candies/room)	Average time to unwrap Units =	Rate of unwrapping Units =
10		
20		
50		
100		
200		

Plot Rate vs. Concentration (Remember to label axes with units)

Michaelis-Menten equation:  $enzyme\ rate\ (v) = \frac{V_{max} \times [S]}{K_M + [S]}$


Estimate the kinetic constants based on the plot:

$V_{max} =$

$K_M =$

$k_{cat} = V_{max}/[enzyme] =$

Plot data in Lineweaver-Burk style (1/rate vs. 1/[concentration of Jolly Ranchers]) (remember to label axes with units)

Equation:  $\frac{1}{v} = \frac{1}{V_{max}} + \frac{K_M}{V_{max}} \times \frac{1}{[S]}$  **NOTE:** this equation is in the form of a straight line.


Estimate the kinetic constants below:

$V_{max} =$

$K_M =$

Which method is easier to estimate values from?

Explain why.

For homework, you will directly calculate the values by fitting these data in Excel and determine how accurate your estimates were.