**CHEM525 Enzyme Kinetics Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. (4 points) From the following kinetic data, what are the Km and Vm values?

|  |  |
| --- | --- |
| **Substrate (mM)** | **Initial Velocity (nanomoles of product formed per minute)** |
| 0.3 | 0.020 |
| 0.6 | 0.035 |
| 1.2 | 0.048 |
| 4.8 | 0.081 |

Km = \_\_\_\_\_\_\_\_\_\_\_\_\_

Vm=\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. (2 points) Using the Michaelis-Menton equation in your responses, answer the following:
2. If [S] >>> Km, what does V0 equal?
3. If [S] = Km, what does V0 equal?
4. (4 points) Complete the following information that details how you will set up one of your reactions.

Stock enzyme solution is 1x109 U/mL (where 1 Unit (U) of activity is the amount of enzyme necessary to generate 1 micromole of product in 1 minute).

Dilution of enzyme made = \_\_\_\_\_. This was made by mixing \_\_\_\_ L of the stock enzyme solution with \_\_\_\_\_\_ L of 50 mM Tris-HCl, 0.1mM CaCl2, pH 8.5

The stock [PGA] solution provided was 2.5% (w/v).

**0.01% PGA reaction**

L 2x Buffer A (100 mM Tris-HCl, 0.2mM CaCl2, pH 8.5)

\_\_\_\_L deionized, distilled H2O

\_\_\_\_L \_\_\_\_%(w/v) PGA

\_\_\_\_L \_\_\_\_\_U/mL enzyme solution