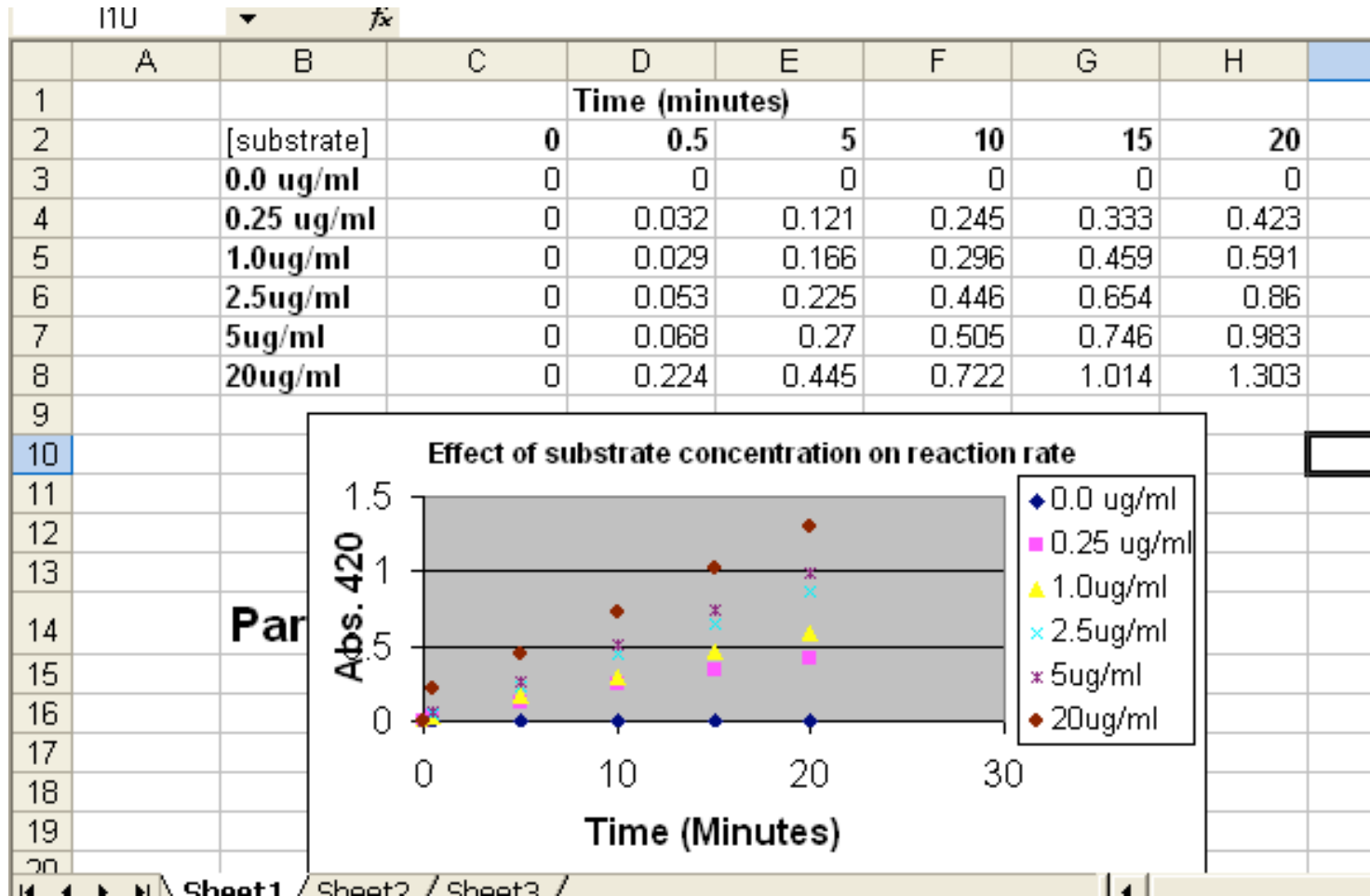


# Graphing using Microsoft Excel 2007

## Tutorial # 5- Determining and plotting reaction velocities

### Step 1

- Enter data as shown
- b. Select the data you wish to graph (area will turn blue)
- c. Select Insert/Scatter/ and the no-line option. Provide title, X and Y axis labels.
- d. Click on any point for each data set to add trendlines.



## Step 2

a. Pick two points on the each line (In this example, the 20ug/ml line was used)

b. Record the x and y values for each point

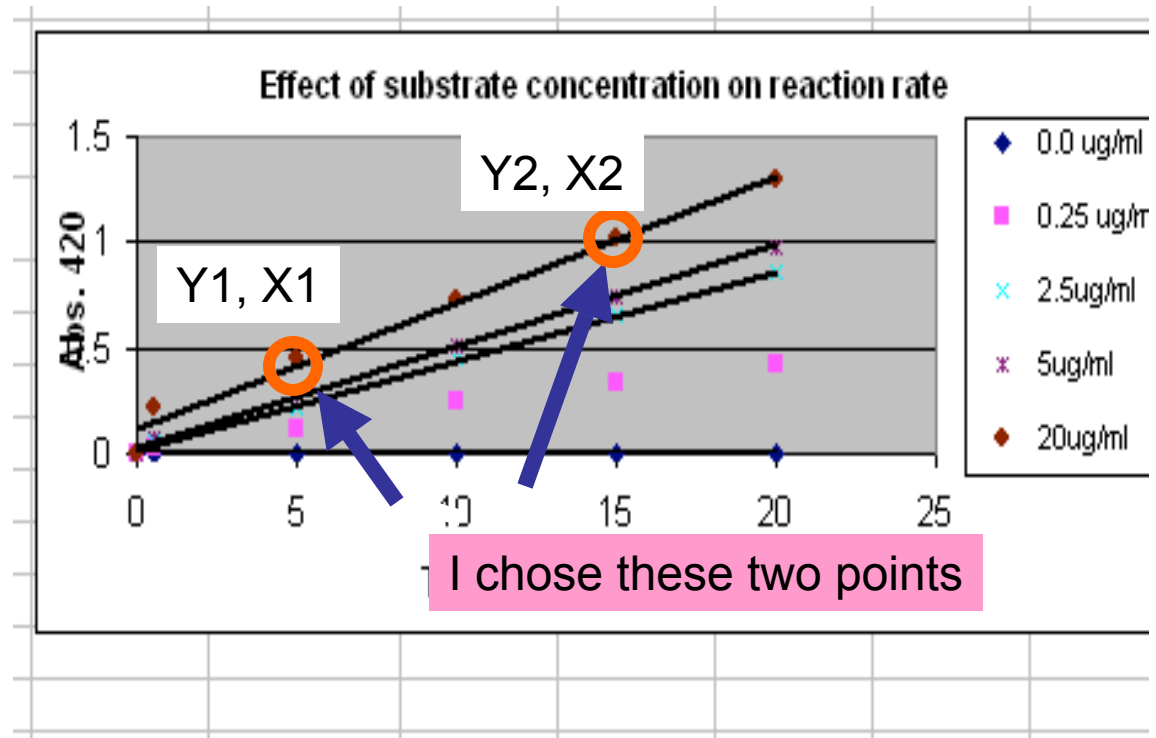
Here,  $X_2 = 15$  min  
 $X_1 = 5$  min  
 $Y_2 = 1.05$  units  
 $Y_1 = 0.45$  units

c. Calculate slope of each line:

$$= (Y_2 - Y_1) / (X_2 - X_1)$$

$$= (1.05 - 0.45) / (15.0 - 5.0)$$

$$= 0.60 / 10 \text{ min or } \mathbf{0.06 \text{ units/min}}$$

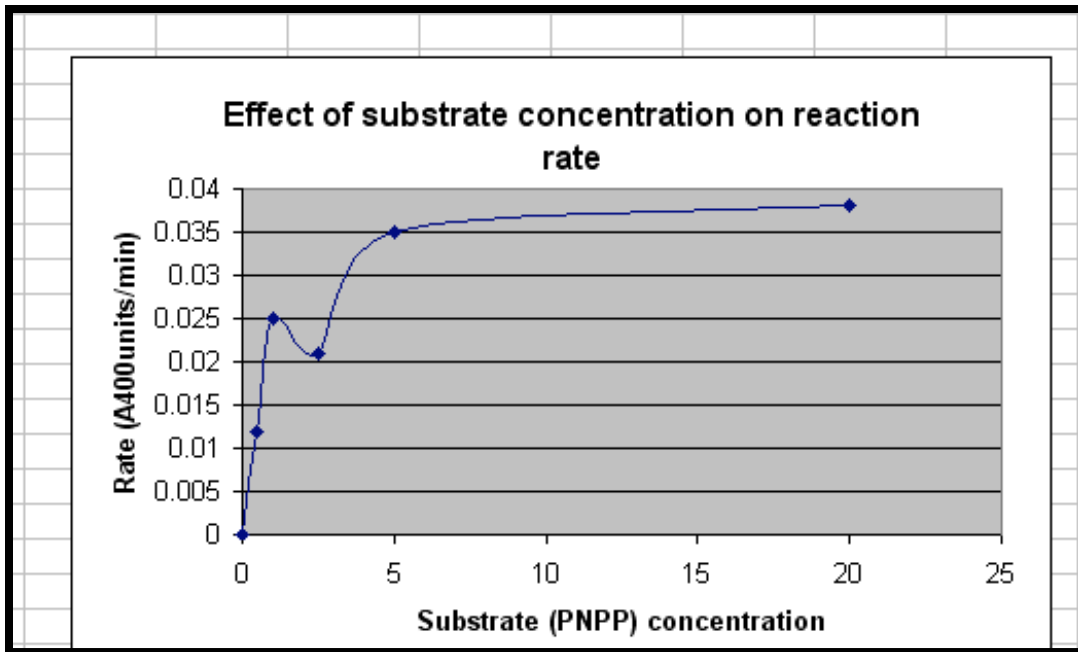
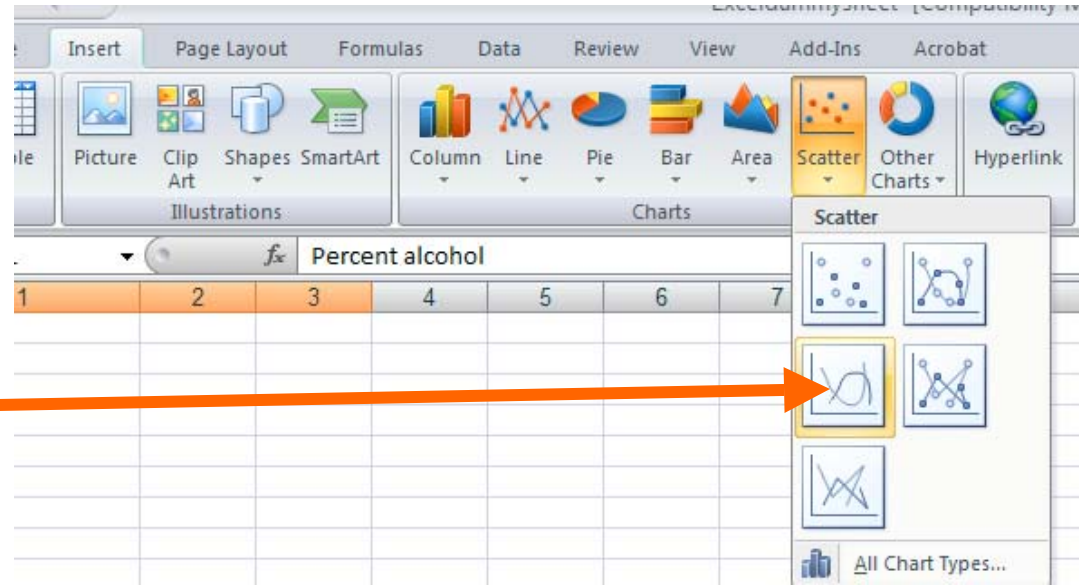


d. Now do the same to calculate the slope for the remaining lines.

**Step 3**

a. Enter slope of each line on a table, as shown

When making graph, choose a curved line option



Note that the rate for 2.5 mM substrate is unexpected. Even so, conclusions can be made about the overall effect of substrate concentration on reaction rates.