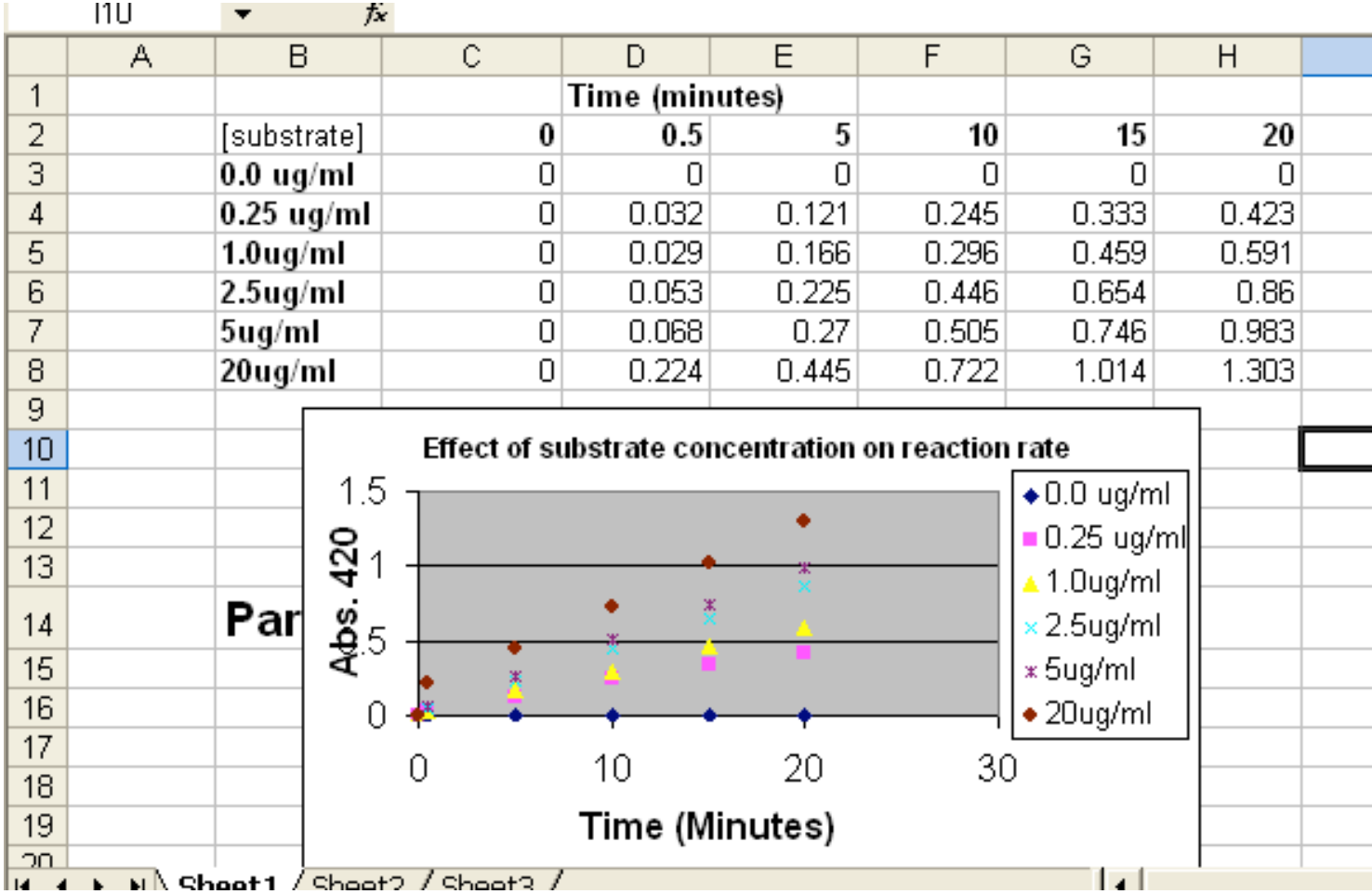
Graphing using Microsoft Excel
Tutorial # 5- Determining and plotting reaction velocities

Step 1

- **Enter data as shown**

b.Select the area you wish to graph (area will turn blue)

c. Chart Wizard will generate this graph (I also used a trendline for each set of points).



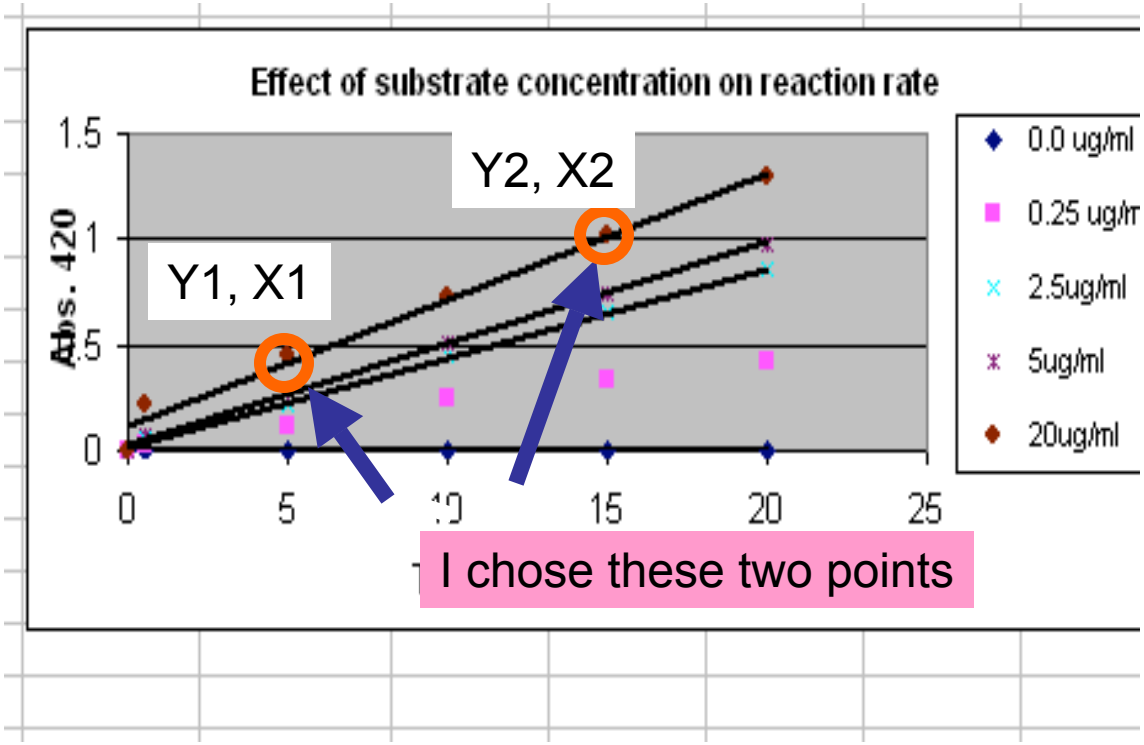
	A	B	C	D	E	F	G	H
1				Time (minutes)				
2		[substrate]	0	0.5	5	10	15	20
3		0.0 ug/ml	0	0	0	0	0	0
4		0.25 ug/ml	0	0.032	0.121	0.245	0.333	0.423
5		1.0ug/ml	0	0.029	0.166	0.296	0.459	0.591
6		2.5ug/ml	0	0.053	0.225	0.446	0.654	0.86
7		5ug/ml	0	0.068	0.27	0.505	0.746	0.983
8		20ug/ml	0	0.224	0.445	0.722	1.014	1.303

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, X2= 15 min
X1= 5 min
Y2= 1.05 units
Y1= 0.45 units



c. Calculate slope of each line:

= (Y2 – Y1)/ X2 –X1)

=(1.05 – 0.45)/ (15.0 - 5.0)

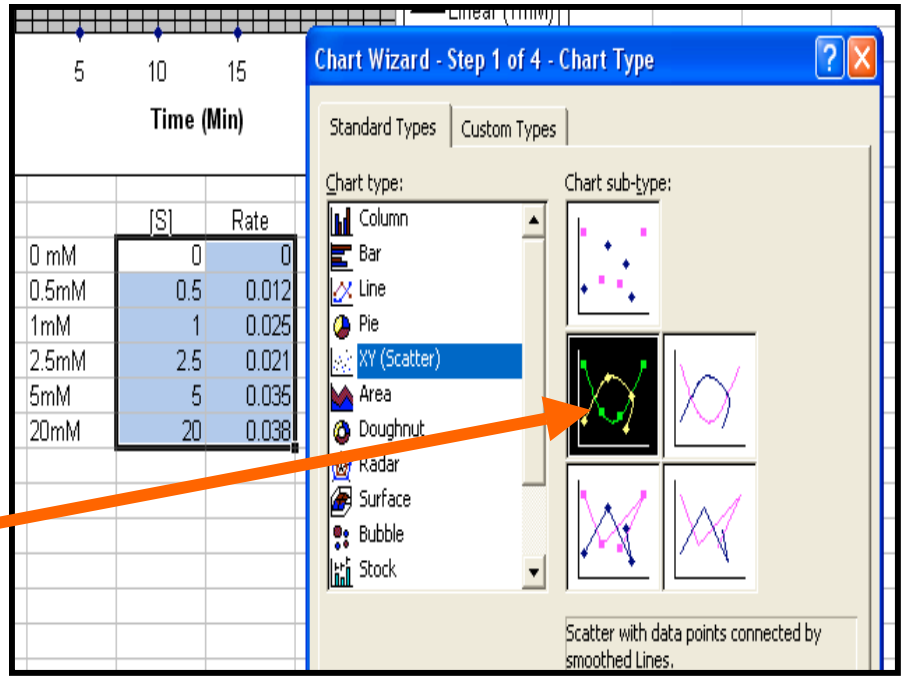
=0.60/10min or 0.06units/min

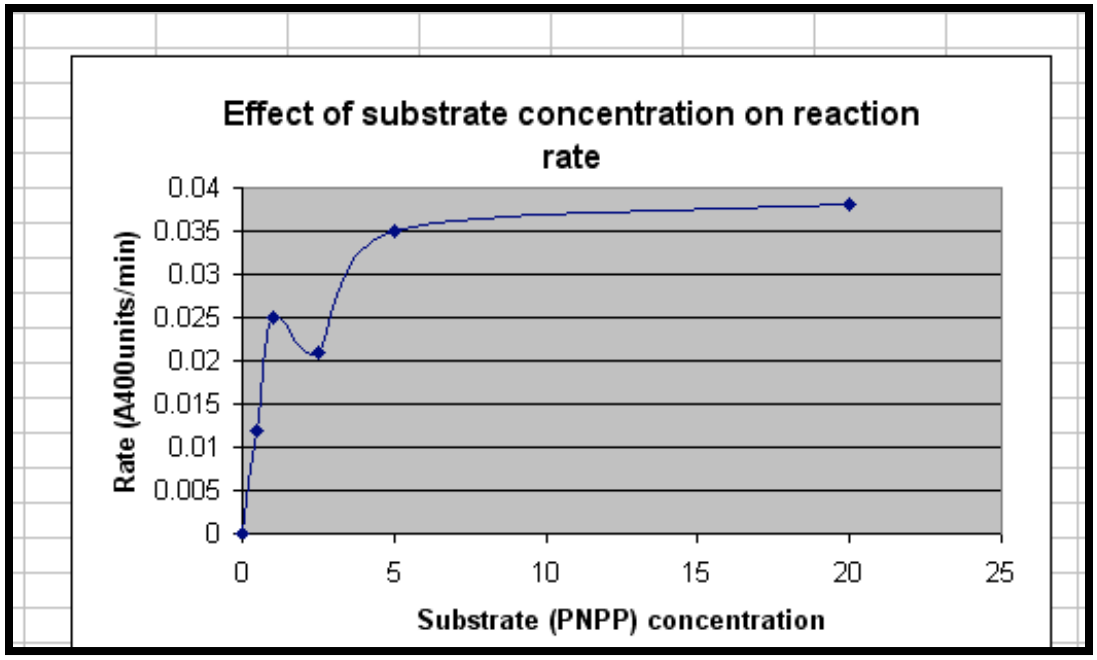
d. Now do the same to calculate the slope for the remaining lines.

Step 3

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

In step 1 of Chart Wizard, highlight blue area shown, select XY scatter and use this style to make your graph.





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.