Graphing Activity

Name_____

Period_____

Date_____

One of the keys to understanding chemistry is an ability to look at data - at some type of measurement - and to find a pattern or a trend among those numbers. For example, we might ask ourselves why the density values of certain kinds of materials are so high or so low? We might want to find out the rate at which our body metabolizes food and to see if it changes at certain times during the day. Scientists frequently pose questions, take measurements, and then try to detect significance in the experimental outcome.

I would like you to simply look at some numbers and try your hand at numerical analysis. Below you will find results of four different events from the Olympic Games over a forty-year period of time. You are given the gold metal results for each event for the Olympics of year indicated. Choose **three** of these events to study and graph the results (by hand). Plot the year of the Olympics on the horizontal axis (x-axis) and plot the result of the event on the vertical axis (y-axis). When your points are plotted, connect the points. For each graph answer each of the following questions:

1. What is the general trend that you notice?
2. Explain any discrepancy in the trend (a point that doesn't fit the trend)?
3. What do you expect the result of the event to be in 2020? (make this very approximate)

YEAR/LOCATION	TRACK AND FIELD Men's Pole Vault (m)	TRACK AND FIELD Men's 100m (sec)	SWIMMING Women's 400 m free style (min)	SWIMMING Men's 4 x 100 Medley Relay (min)
1952 Helsinki	4.55	5:12	10.79	NA
1956 Melbourne	4.56	4.54	10.62	NA
1960 Rome	4.70	4.50	10.32	4.05
1964 Tokyo	5.10	4.43	10.06	3.58
1968 Mexico City	5.40	4.31	9.95	3.54
1972 Munich	5.50	4.19	10.14	3.48
1976 Montreal	5.50	4.09	10.06	3.42
1980 Moscow	5.78	4.08	10.25	3.45
1984 Los Angeles	5.75	4.07	9.99	3.39
1988 Seoul	5.90	4.03	9.92	3.36
1992 Barcelona	5.80	4.07	9.96	3.36
1996 Atlanta	5.92	4.07	9.84	3.34
2000 Sydney	5.90	4.06	9.87	3.33
2004 Athens	5.95	4.05	9.85	3.30
2008 Beijing	5.96	4.03	9.69	3.29