Graphing HW

Graph the following data obtained by a biologist who was studying the effect of acidity on the survival rate of tadpoles. The acidity of the water is measured via the pH. With a pH of 1 being very acidic, a pH of 7 being nuetral, and a pH of 14 being very basic. Each group started out with 150 tadpoles. After 30 days the number of tad poles that survived was counted.

Graph A

Surviving Tadpoles	pH of water
13	2
18	4
54	6
65	8
3	10
0	14

Answer the following questions by referring to the graph

1. What is the independent variable (the cause)?
   Which is the dependent variable (the effect)?
2. What pattern emerges from the data as you graphed the results? (Remember do not connect the points in a dot to dot manner, but look and find the line or curve of "best fit".

3. Estimate the number of tadpoles that would survive at a pH of 5.

4. Are you certain of the number of surviving tadpoles at pH of 5? Why or why not?

Graph B

Graph the following data obtained by an chemist for the solubility of a solid (like sugar) that is dissolved in water at various temperature..

Temperature of water	Amount of Solid X Dissolved
0 C	40 grams
15 C	55 grams
20 C	60 grams
35 C	75 grams
55 C	95 grams
60 C	100 grams

Answer the following questions

1. Which is the independent variable (the cause)?
   Which is the dependent variable (the effect)?
2. How much solid will dissolve in the water at 45 degrees C?

3. How much solid will dissolve in the water at 70 degrees C?

4. How certain are you of the answers to Number 2 and 3?

5. What type of relationship exists between the two variables?
   (direct or inverse?)

Graph C

Graph the following data collected by a marine biologist for the San Marino bay over a period of 6 months.

Date 2007	Temp (Celsius)
April 15th	38
April 30th	48
May 15th	52
May 30th	58
June 15th	68
June 30th	72
July 15th	74
July 30th	74
Aug 15th	71
Aug 30th	65
Sept 15th	58
Sept 30th	45

Answer the following questions

1. Which should go on the x axis, the temperature or the date?
   Think…What is the cause and what is the effect?

2. The date and temperature are not a true cause and effect relationship. What name is given to a trend that does not have a direct link of cause and effect?

3. If you were to gather the data for a second year, how might the graph be similar? How might it be different?