

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Use the guidelines below. A separate sheet of graph paper should be used for each section.

1. Give your graph a title in the following form: "The dependence of (your dependent variable) on (your independent variable).
2. The x-axis of a graph is always your independent variable and the y-axis is the dependent variable.
3. Always label the x and y axes with the appropriate descriptive **labels and units**.
4. Draw a line of best fit for every section except D; you may connect the dots for section D.
5. Make sure your data is graphed **as large as possible** in the space you've been given.
6. When two sets of data are given for one graph, make data points solid for one set of data and an outline for the other set then make one line broken and one line solid. Make a key at the bottom of the graph indicating which is which.
7. Write your answers to the questions below the graph.

Section A: The flow of water in gallons per minute through pipes of various diameters was recorded during the heaviest rainfall in November 2014 then again in December 2014.

Diameter in mm	Flow in gpm
1.0	35
1.6	47
1.15	38
2.5	124
3.85	149
1.8	51

Diameter in mm	Flow in gpm
1.0	38
1.6	52
1.15	38
2.5	130
3.85	157
1.8	64

1. Which month had higher flow rates? \_\_\_\_\_
2. At which diameter did the flow rate remain the same? \_\_\_\_\_

Section B: The number of bacteria colonies were counted at various intervals and recorded by two different laboratory assistants. The first assistant used the quadrant method and the second assistant counted each colony individually.

Time in days	# of colonies
1	8
3	20
5	40
7	84
9	120
11	224

Time in days	# of colonies
1	7
3	19
5	41
7	87
9	117
11	226

1. Is there very much difference between the two sets of data? \_\_\_\_\_
2. From which day to which day did the colonies multiply the fastest? \_\_\_\_\_

Section C: The number of shots out of 20 that hit a target are recorded from several distances.

Distance in meters	# of hits
5	19
10	17
15	15
20	15
25	13
30	11

1. Which distance produced the greatest number of shots that hit the target?  
\_\_\_\_\_

2. Which distance produced the least number of shots that hit the target?  
\_\_\_\_\_

Section D: Seeds were planted at various temperatures. The number of seeds that sprouted in 10 days was recorded.

Temp. in degrees C	# of sprouts
15	0
20	18
25	27
27	33
30	28
38	17

1. What seems to be the best temperature to germinate seeds?  
\_\_\_\_\_

2. Why do you think there were no sprouts at 15 degrees Celsius?  
\_\_\_\_\_

Section E: Tomato plants were given different amounts of fertilizer and were then measured over a period of 3 months. The average growth of the plants was recorded in the table below.

Fertilizer in g	Growth in mm
0.25	27
0.50	46
0.75	74
1.00	81
1.25	86
1.50	84

1. Which amount of fertilizer produced the greatest amount of growth?  
\_\_\_\_\_

2. Why do you think this happened?  
\_\_\_\_\_

Section F: A sample of wastewater was treated with different amounts of chlorine. A test was done to find the number of bacteria colonies that were grown from the treated water.

Chlorine in mg	# of colonies
150	426
200	434
225	128
250	78
300	46
400	10

1. Which amount of chlorine should be used to treat wastewater?  
\_\_\_\_\_

2. What could have caused a lower amount of chlorine to kill more bacteria?  
\_\_\_\_\_