

BRAIN STRETCHER #1

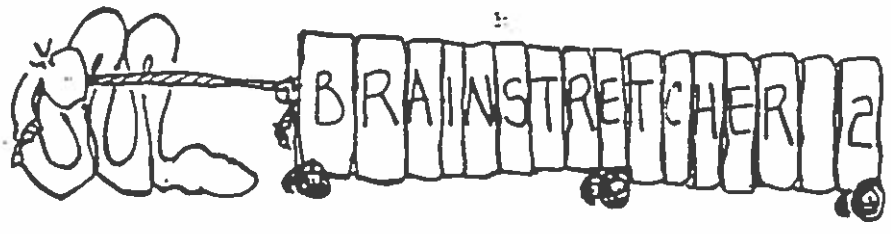
Directions: Flip a penny 5, 10, 15, 20, 25, 30, and 35 times separately. Record the number of times the coin lands heads up for each test. Organize your data here below. There is no right or wrong way to organize your data. Just make sure you record it accurately.

Vocabulary: Define the following words.

1. Jargon—

2. Data—

Question: Answer the following question.
How is data valuable to scientists?



Directions: Identify the different parts of the data table by answering the questions that follow it.

High Daily Temperature

Time (days)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Temperature (°C)	27	28	31	30	34	38	42	18	20	24	21	29	33	28	38

1. The title is _____.
2. The two variables are _____ and _____.
3. The unit for time is _____ and for temperature is _____.
4. List the ordered pairs.

5. The highest daily temperature was _____ which occurred on day _____.
6. Day 10 had a temperature of _____.
7. On two days, the temperature recorded was 28°C. One was day _____ and the other was day _____.

Vocabulary: Define the following words.

1. Data table—

2. Title—

3. Variable—

4. Unit—

5. Ordered pair—

Questions: Answer the following questions.

Why is it important to have variables and units included in a data table?

What is the best way to identify an ordered pair?

BRAIN STRETCHER #5

Directions: Using the guidelines in your graphing booklet, correct each of the following data tables.

1.

Height of Corn Plants

Time	1	2	3	4	5	6	7	8
Height	5	25	70	82	120	306	420	570

2.

Time (weeks)	1	2	3	4	5	6	7	8
Height (cm)	5	25	70	82	120	306	420	570

3.

Time	1	2	3	4	5	6	7	8
Height	5	25	70	82	120	306	420	570

4.

Height of Corn Plants

Height (cm)								

5.

Height of Corn Plants

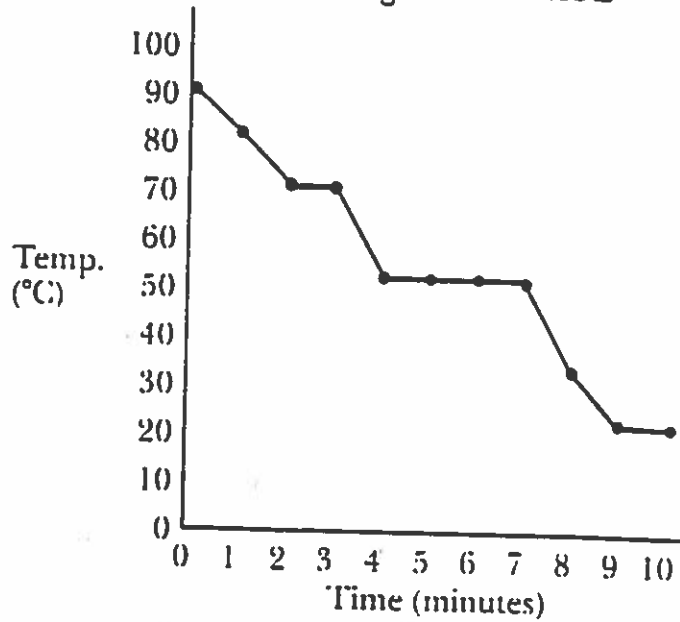
(weeks)	1	2	3	4	5	6	7	8
(cm)	5	25	70	82	120	306	420	570

Brain Stepper 4

Directions: Using the graph, answer the questions that follow it.

2-sided

Cooling of Substance Z



1. The title of the graph is _____
2. The two variables are _____ and _____
3. The unit for time is _____ and for temperature is _____
4. At 3 minutes it was _____ °C.
5. At 9 minutes it was _____ °C.
6. At 70°C the time was _____ minutes.
7. At 30°C the time was _____ minutes.
8. At what temperature did substance Z level off for 4 minutes?

9. What was the starting temperature of substance Z? _____
10. The total temperature loss for substance Z was _____

Vocabulary: Define the following words.

1. Graph—

2. Horizontal axis—

3. Vertical axis—

4. Intersection—

5. Data point—

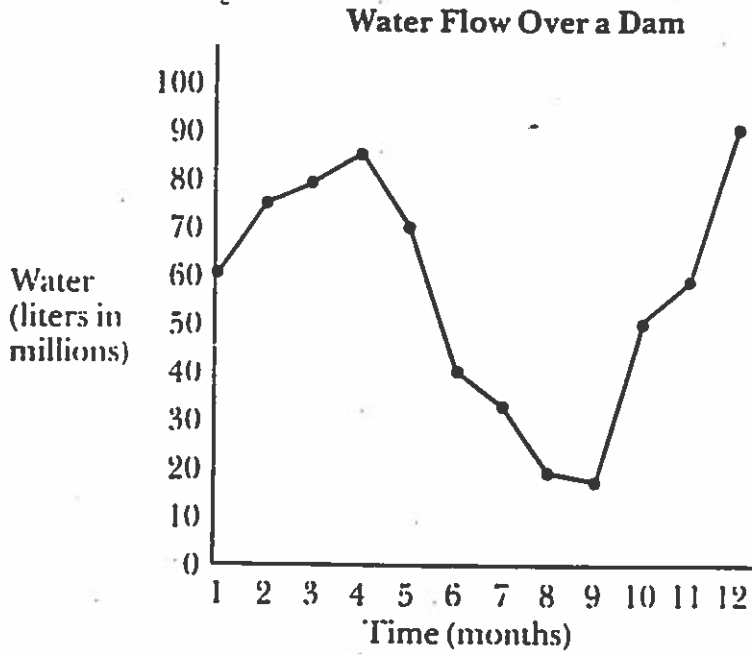
6. Plot—

Question: Answer the following question.

What are the similarities between a data table and a graph?

Brain Stealer 5

Directions: Using the following graph, construct a data table in the space below. Remember the guidelines in the graphing booklet.



Question: Answer the following question.
How do you find an ordered pair given only the data point?

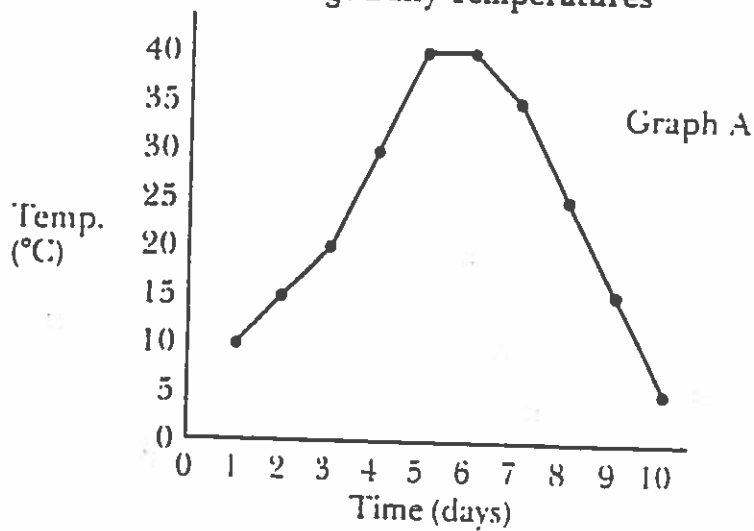
Brain Stepper #6

Directions: Compare the data table with the two graphs and answer the questions.

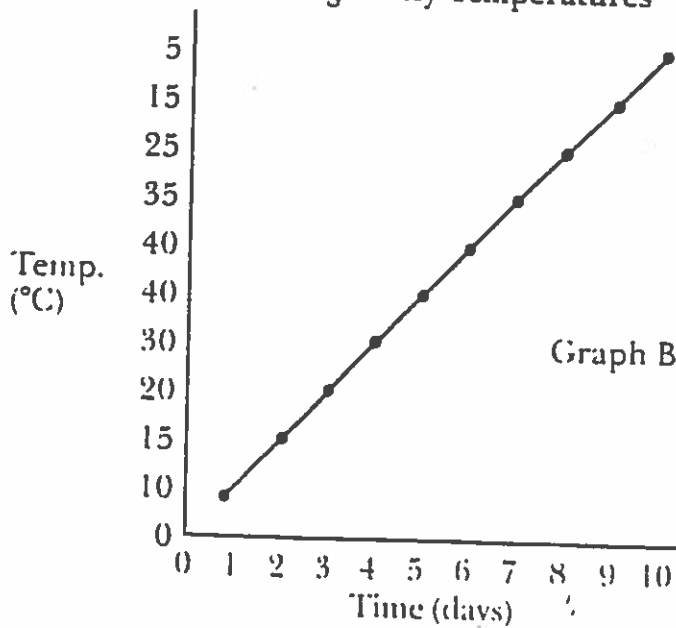
Average Daily Temperatures

Time (days)	1	2	3	4	5	6	7	8	9	10
Temperature (°C)	10	15	20	30	40	40	35	25	15	5

Average Daily Temperatures



Average Daily Temperatures



1. What does the line in graph A show the temperature doing over 10 days?
2. What does the line in graph B show the temperature doing over 10 days?
3. What is the major difference in the lines of the two graphs?
4. Look at the data for temperature in the data table. Describe what happens to the temperature.
5. Which graph shows an accurate picture of the data?
6. How would you change the graph that does not show an accurate picture of the data?

BRAIN STRETCHER 7

Directions: Using the data tables below, construct a line graph for each. Use a separate sheet of graph paper for each graph.

7a)

Average Rainfall in Willamette Valley

Time (months)	1	2	3	4	5	6	7	8	9	10	11	12
Rainfall (mL)	15	21	28	24	16	8	2	1	2	3	5	10

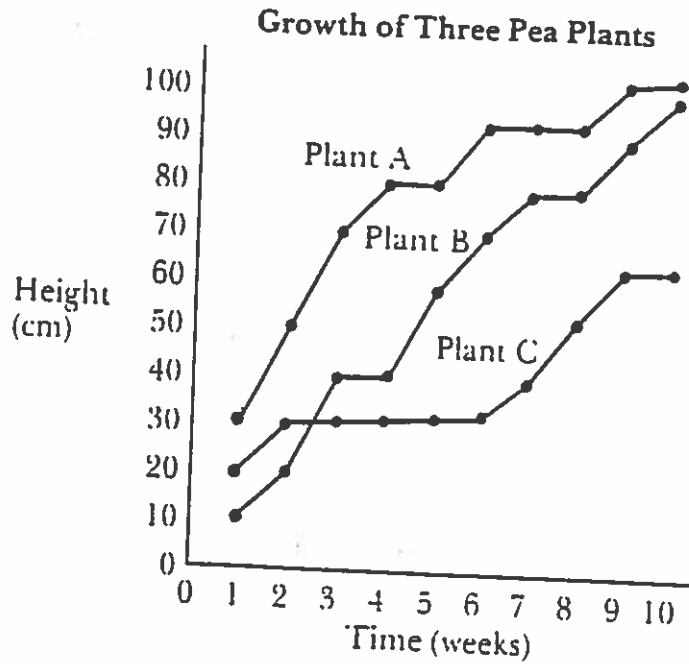
7b)

High Daily Temperatures

Time (days)	1	2	3	4	5	6	7	8	9	10	11	12
Temperature (°C)	27	28	31	30	33	37	36	18	20	21	24	30

BRAIN STRETCHER 8

Directions: Using this graph, answer the following questions.



1. For the weeks given, record the heights of the three plants.

Week	Plant A	Plant B	Plant C
3	_____	_____	_____
7	_____	_____	_____
10	_____	_____	_____

- How many weeks did it take for plant A to reach 90 cm? _____
- Which plant remained at about 30 cm for 4 weeks? _____
- Which plant remained at 90 cm for 2 weeks? _____
- When plant A was 50 cm tall how tall was plant C? _____
- Which plant grew the most? _____
- Which plant grew the least? _____
- Which plant was probably sick? _____

Brain Stretcher Nine

Directions: Construct a multiple line graph for each of the two data tables below. Use a separate piece of graph paper for each graph.

a)

Gain in Mass of Young Mice

Time (weeks)	1	2	3	4	5	6	7	8	9	10
Mass 1 (mg)	25	115	140	210	400	720	780	810	830	900
Mass 2 (mg)	20	120	125	200	250	300	400	520	540	570
Mass 3 (mg)	30	140	160	220	380	680	690	770	800	950

b)

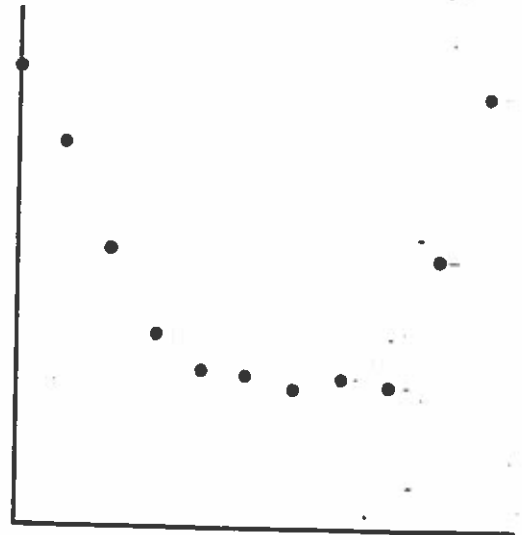
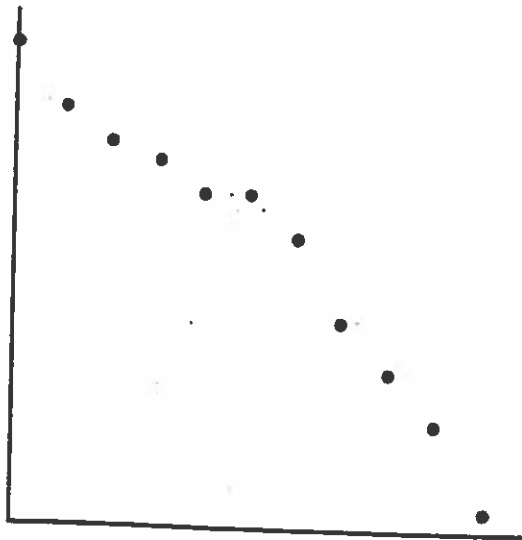
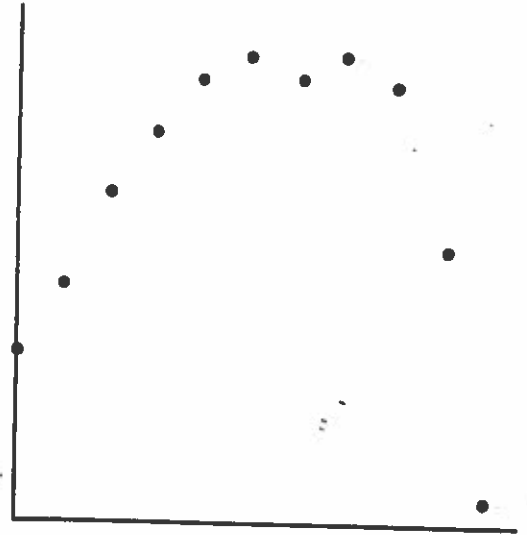
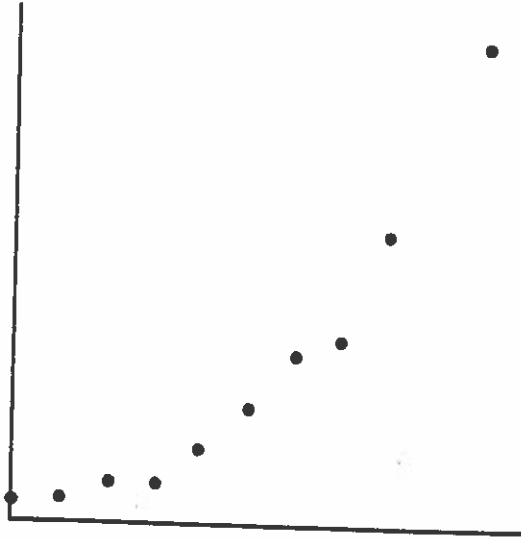
High Temperatures For Three Cities

Time (days)	1	2	3	4	5	6	7	8	9	10
Temp. (LA) (°C)	28	29	22	27	26	27	29	31	30	24
Temp. (SF) (°C)	18	22	20	17	21	21	20	18	21	19
Temp. (PD) (°C)	11	10	14	13	15	16	15	11	15	17

Question: Answer the following question.
 What are the advantages of a multiple line graph?

Brain Stepper 10

Directions: Practice making a smooth curve on the following graphs.



Question: Answer the following question.
What are the differences between a line and best fit graph?

BRAIN STRETCHER #15

Directions: Construct a best fit graph for each of the two data tables below. Use a separate piece of graph paper for each graph.

11a)

Height of Corn Plants

Time (weeks)	1	2	3	4	5	6	7	8
Height (cm)	5	25	70	82	120	306	420	570

11b)

High Daily Temperature

Time (days)	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Temperature(°C)	27	28	31	30	34	37	37	18	20	24	21	29	32	37