

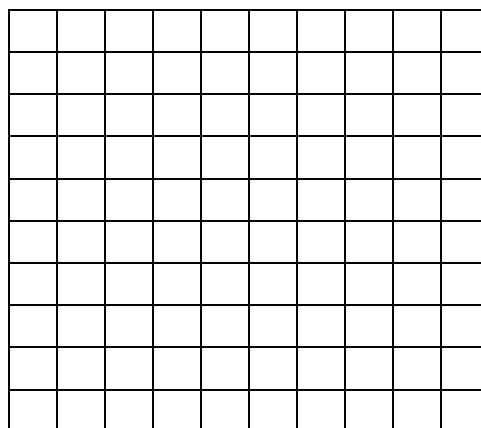
All around you, things occur in patterns. Once you observe a pattern, you can predict information beyond and between the data observed. The ability to use patterns to make predictions makes it possible for you to run to the right position to catch a fly ball or to guess how a story will end.

Leaky Larry did an experiment to determine the rate at which a leaking faucet loses water. He recorded the data he observed in the table below.

Time (sec.)	5	10	15	20	25	30	35	40	45	50
Water Volume (ml)	4	8	12	16	20	24	28	32	36	40

1. What variables did Larry investigate in his experiment? Which variable represents the independent and which variable represents the dependent quantity?

2. Make a coordinate graph of the data Leaky Larry collected. Be sure to label the axes.



3. Describe the relationship between the two variables.

4. If a faucet dripped at the same rate as Larry's did, how much water would be wasted in 2 minutes?

In 2.5 minutes?

In 3 minutes and 15 seconds?

Explain how you made your predictions.

5. If a faucet dripped into a one-liter measuring container at the same rate as Larry's experiment, how long would it take for the container to overflow?

6. Besides time, what other variables might affect the amount of water in the measuring container?

7. If a faucet leaked at the same rate as Larry's experiment, how much water would be wasted in one month? (Assume a month has 31 days.) Explain how you arrived at your answer.

8. Due to the shortage of water in our area, the San Antonio Water System charges its customers \$0.152 for every 10 liters of water used. Use this information and your answer from question 5 and 7 to figure out the cost of the water wasted by a leaking faucet in one month in San Antonio. (Assume a month has 31 days.) Explain how you arrived at your answer.