

# GRAPHS

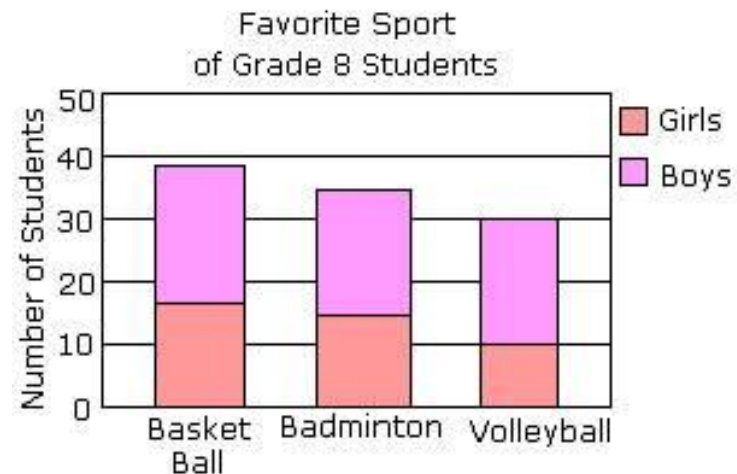
A graph will tell you at a glance, the changes in trends for what you are graphing (if the graph is rising or falling or fluctuating).

Graphing information is a short way of presenting your data without using many words.

You get your point across quickly and efficiently and in a visually pleasing manner.

Example:

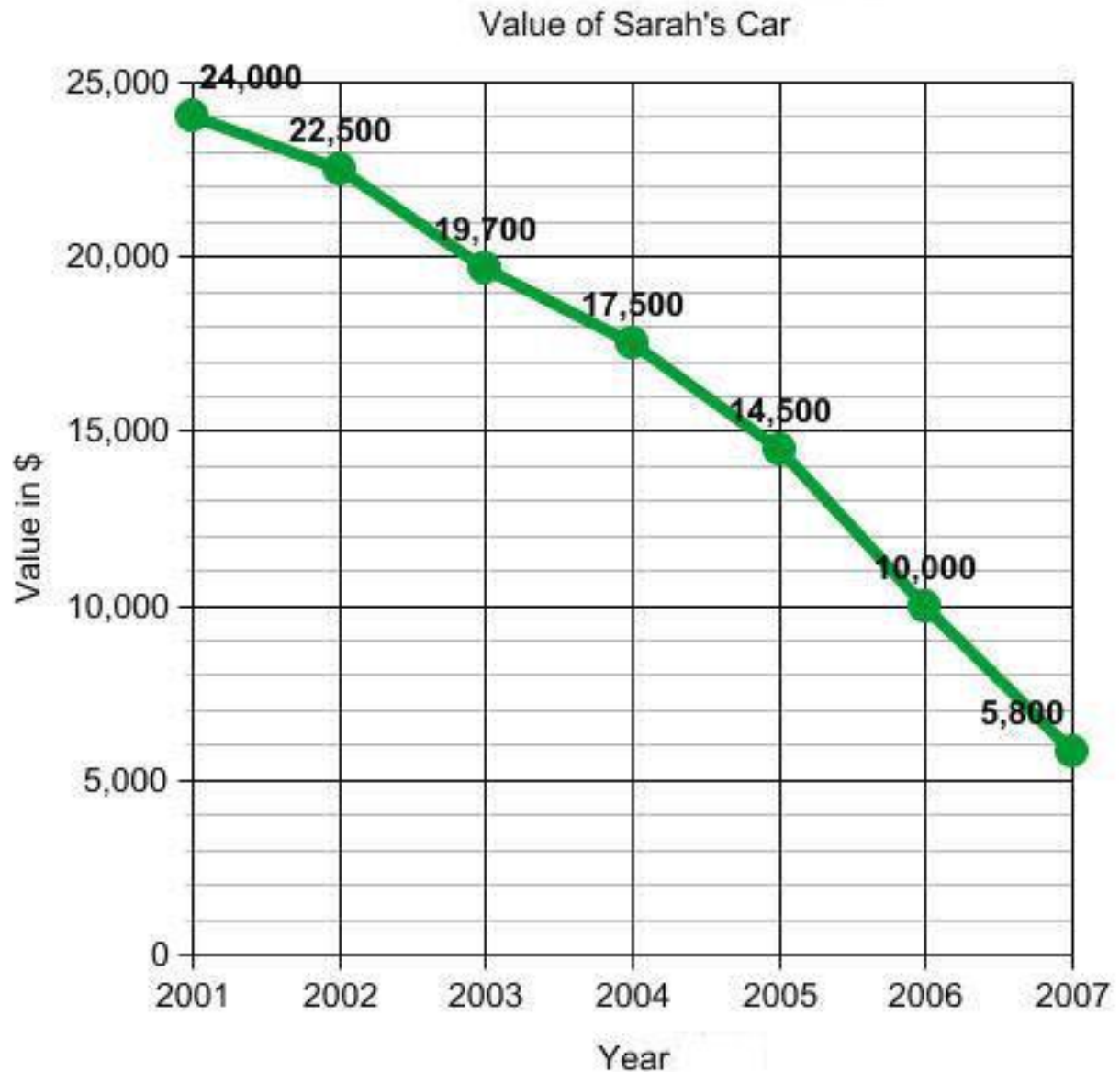
If you want a comparison of something, use a bar graph.



If you want to show a trend use a line graph and so on.

Value of Sarah's Car

Year	Value
2001	\$24,000
2002	\$22,500
2003	\$19,700
2004	\$17,500
2005	\$14,500
2006	\$10,000
2007	\$ 5,800



## **Getting the Picture: Communicating Data Visually**

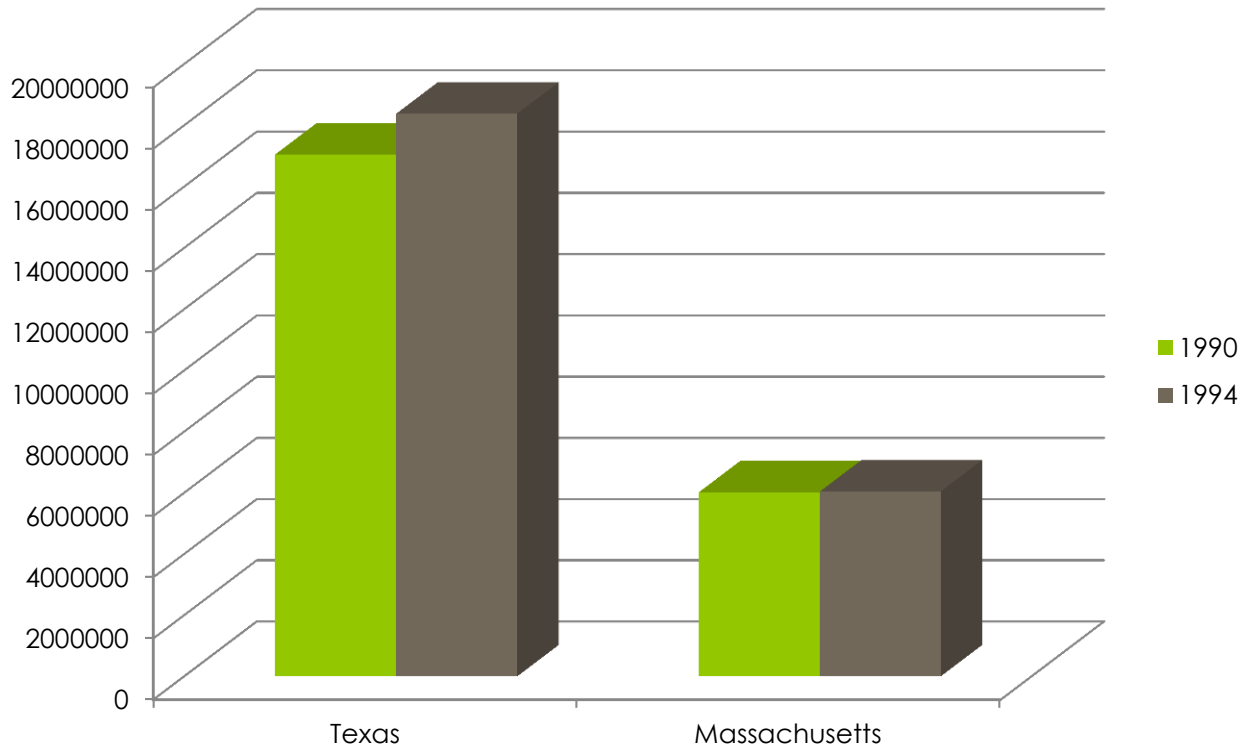
“According to U.S. census estimates, the population of Texas grew from 17,045,000 people in 1990 to 18,378,000 in 1994. The population of Massachusetts grew from 6,018,000 people in 1990 to 6,041,000 people in 1994.”

Reading about data can be awkward. When it's presented like this, it's hard to grasp the essential information and to see the important messages that may be behind the numbers.

If this information were presented as a chart it would be much easier to understand. The bar graph makes the messages in the data much more visible.

The bar graph gives you new clues about the information and shows you patterns that you might not notice in a text or table format.

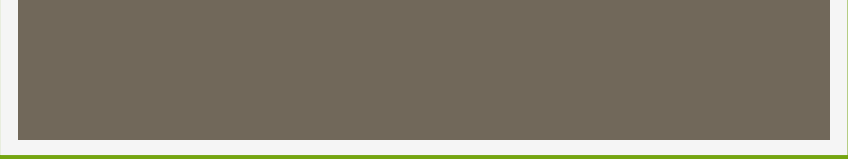
## Population of States



Texas' population increased 7.8%  
Massachusetts population increased 0.4%

# Getting the message across

- Clear charts and graphics of information are used in decision making in a variety of fields:
  - air travel
  - government legislation
  - Manufacturing and industry
  - education



Remember graphs are used to present a particular set of numerical information in the most clear and understandable manner possible.

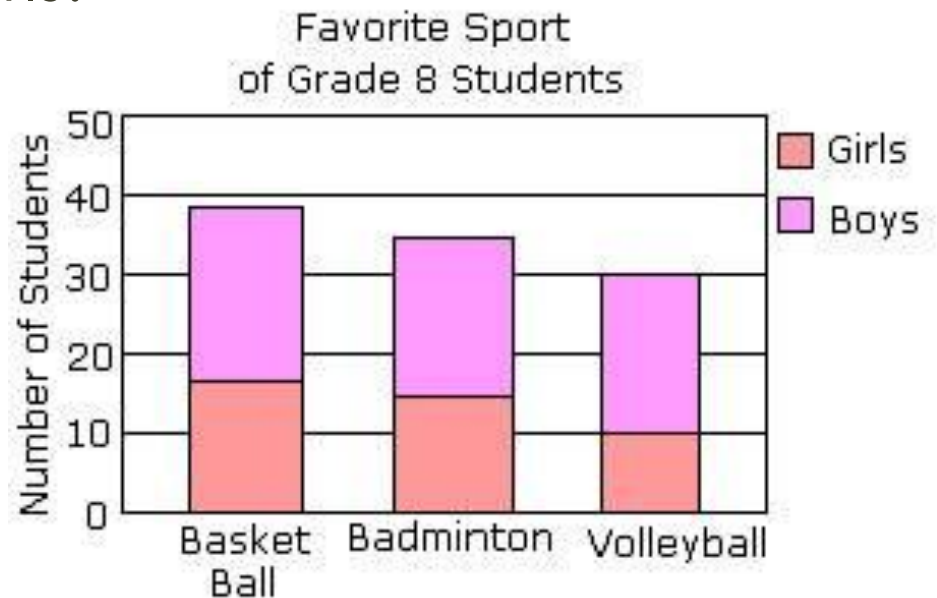
# Definition of Stacked Bar Graph

## Graph

- Stacked bar graph is a graph that is used to compare the parts to the whole. The bars in a stacked bar graph are divided into categories. Each bar represents a total.

# Example of a stacked bar graph.

- In the following example, each bar of the stacked bar graph is divided into two categories: girls and boys. Each of the three bars represents a whole. That is: about 38 students like basketball, out of which 16 are girls.

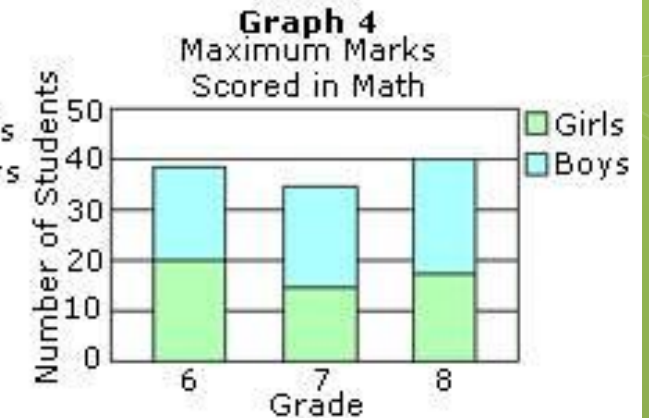
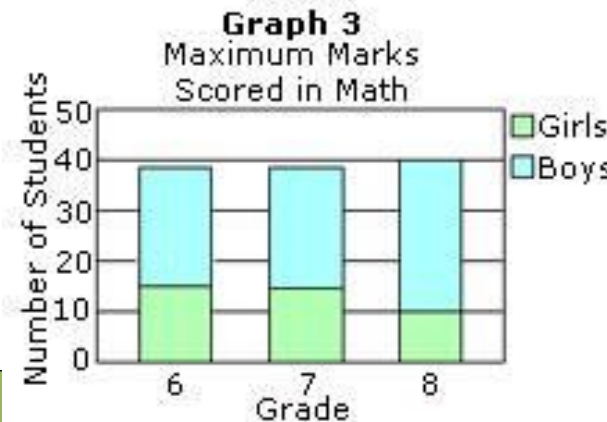
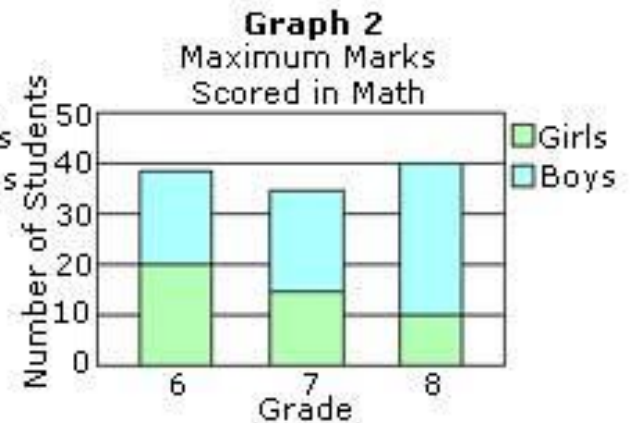
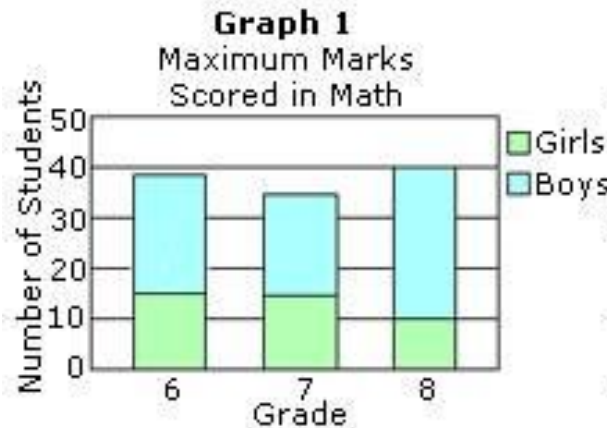


# Solved Example on Stacked Bar Graph

- The table shows the maximum marks scored by grade 6, 7, and 8 students in math. Which of the following is the correct stacked bar graph for the table shown?

Maximum Marks Scored in Math

Grade	Girls	Boys
6	20	19
7	15	20
8	10	30



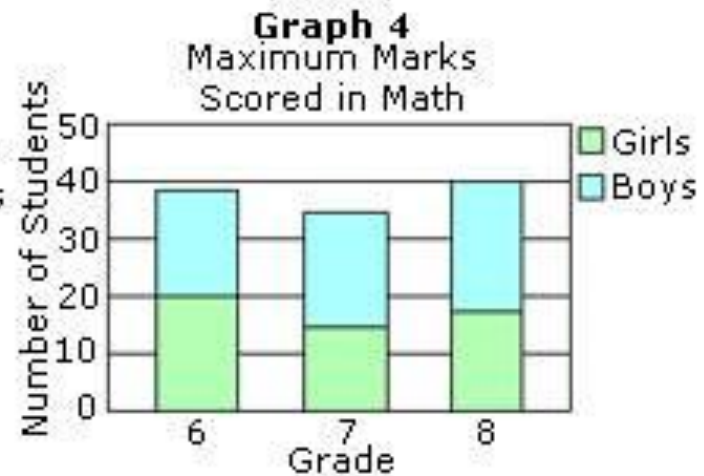
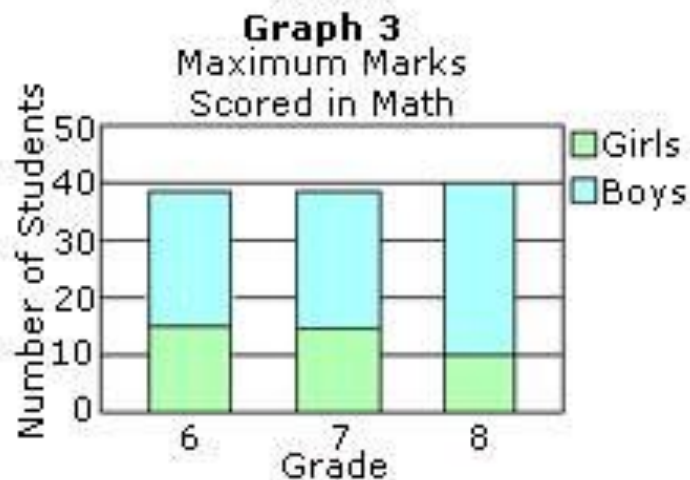
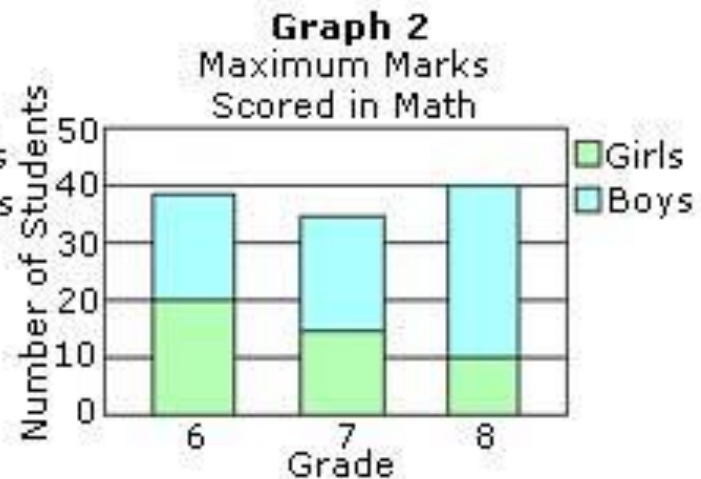
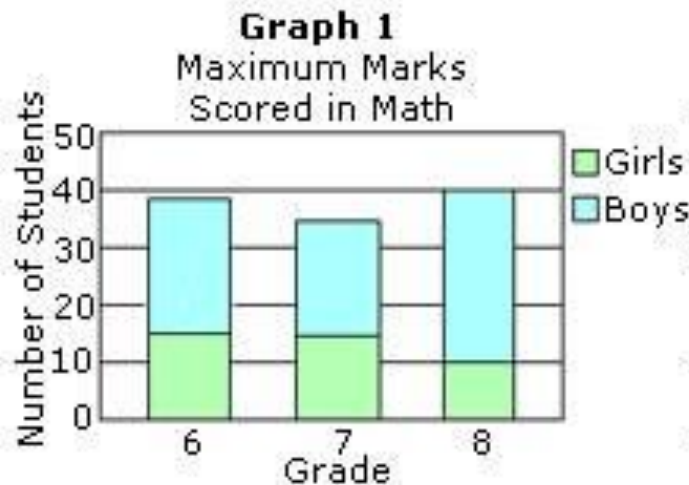
# Choices:

A. Graph(1)

B. Graph (2)

C. Graph(3)

D. Graph(4)



# Correct Answer: B

- **Solution:**
- **Step 1:** The values in Graph 2 matches with the values in the table given.
- **Step 2:** So, Graph 2 is the correct stacked bar graph.

# Pie Chart/Graph

- **Definition of Pie Chart (page 74)**
- A Pie Chart is a circular chart which is divided into sectors in which the area of each sector represents the size of the data.
- **More about Pie Chart**
- It is also known as circle graph.
- Pie charts are used to show data in proportion.
- When all the sectors are combined together it forms a complete disk

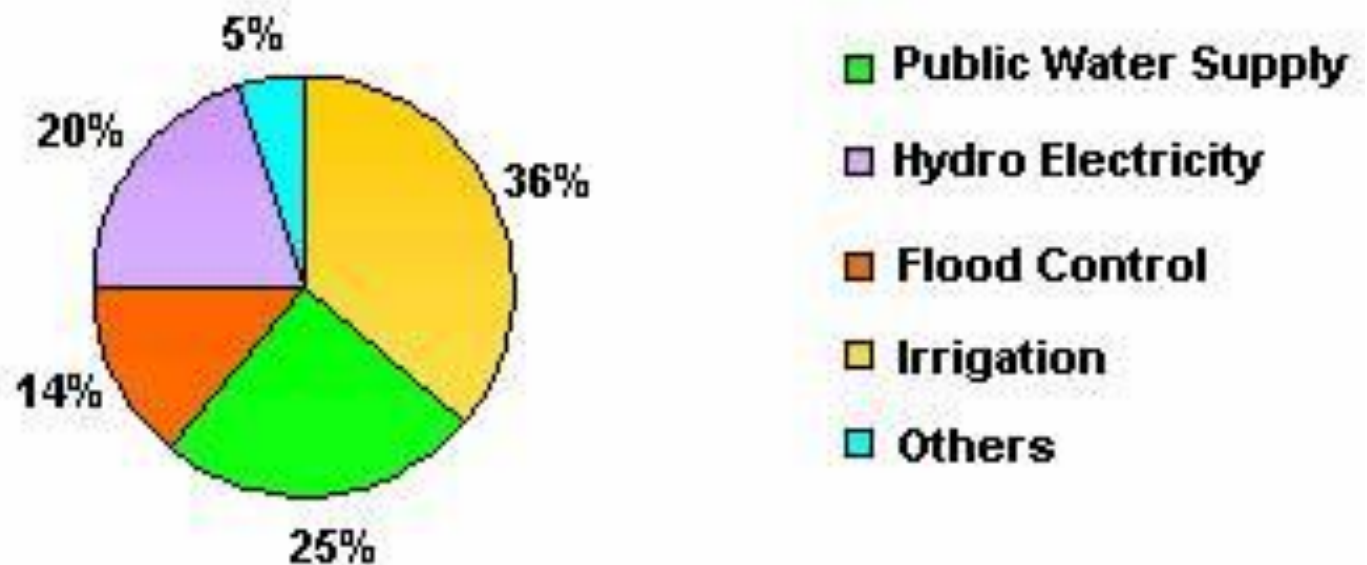
# Solved Example on Pie Chart

- The pie chart shown below represents the percentage of dams built for different purposes. Find the total percentage of dams built for irrigation and hydroelectricity generation

- **Choices:**

- A. 56%
- B. 38%
- C. 40%
- D. 45%

**Percentage of dams built for different purposes**



# Correct Answer: A

- **Solution:**

**Step 1:** From the pie chart, the percentage of dams built for irrigation = 36

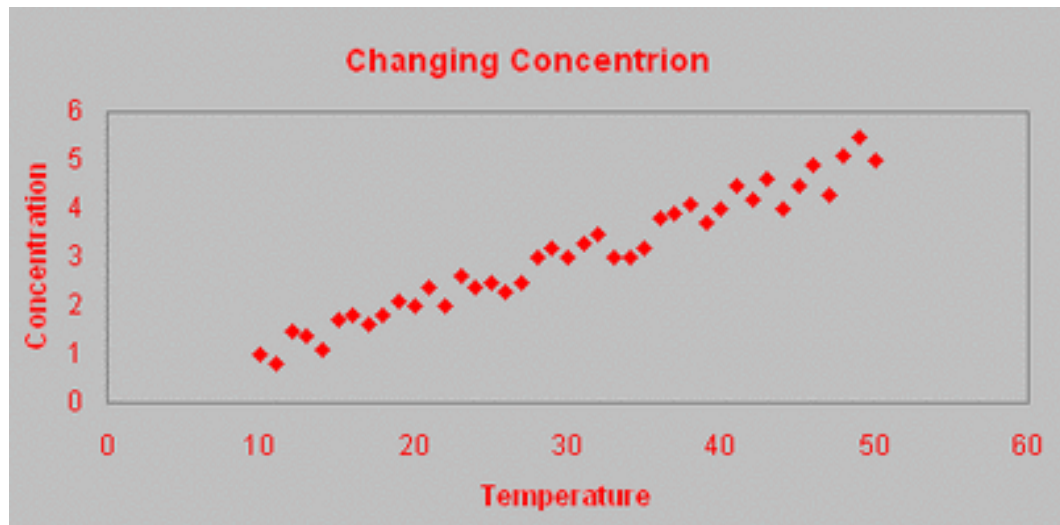
**Step 2:** Percentage of dams built for generating hydroelectricity = 20

**Step 3:** Percentage of dams built for irrigation and for generating hydroelectricity =  $36 + 20 = 56$  [Add the percentages.]

**Step 4:** So, 56% of the dams were built for irrigation and for generating hydroelectricity.

# X/Y Scattergraph

- shows the relationship between two sets of data (see page 73 for example)
- independent variable goes on the horizontal axis (across bottom line)
- dependent variable does on the vertical axis (up/down line)



# Proportional Area Graphs

- use shapes or symbols to represent data {usually circles} (see page 75)
- these graphs effectively show comparisons between data that are related to particular areas on a map

