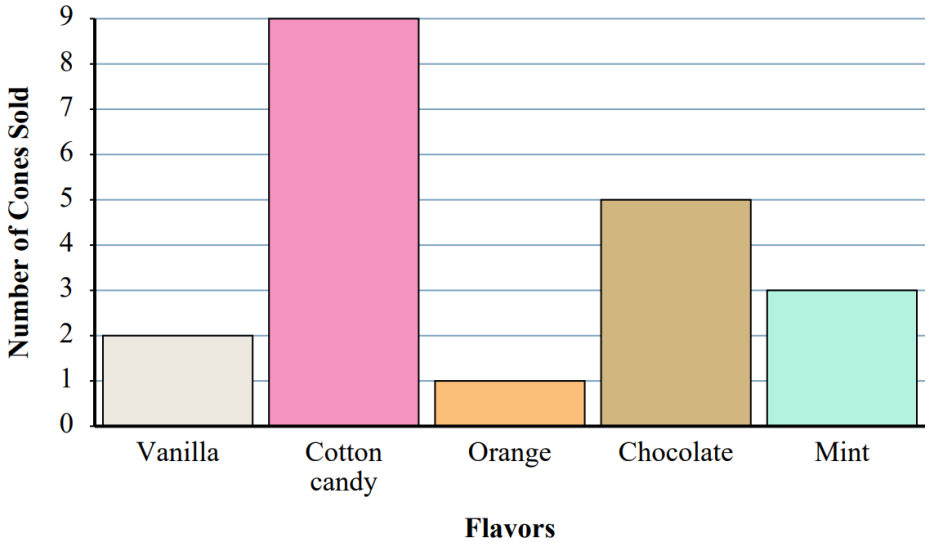
Definition 1. A **bar graph** (or bar chart) is a graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent. The bars can be plotted vertically or horizontally.

Example 1. An ice cream store kept track of the different flavored ice cream cones they sold in a day. They recorded the results in the bar graph below. Use their graph to answer the questions.

Bar Graph



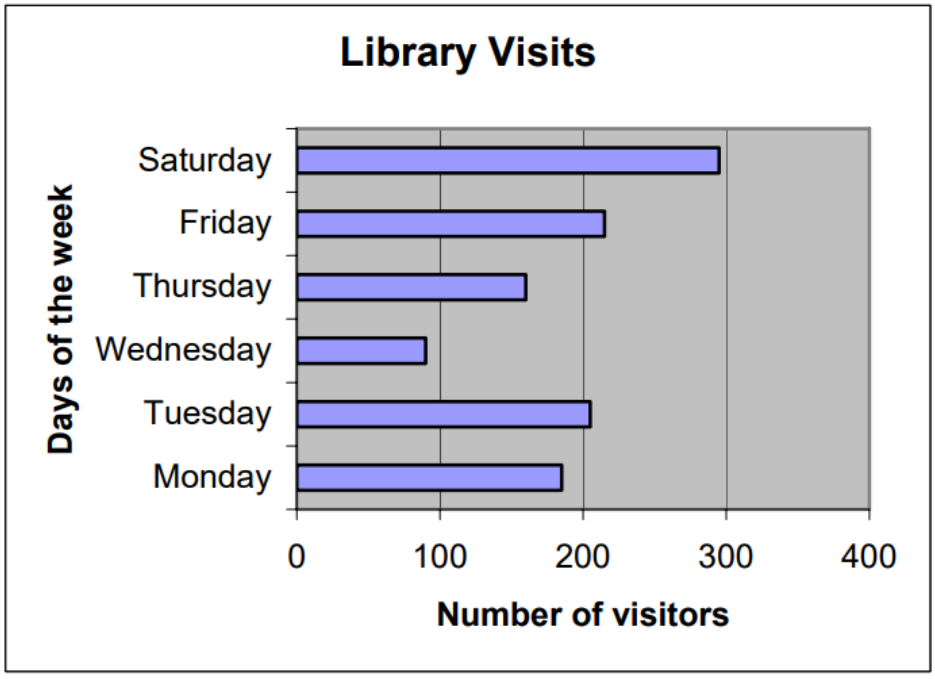
1. How many vanilla cones were sold? **2**
2. Were there more vanilla or more mint cones sold? **Mint**
3. Were there fewer chocolate or fewer cotton candy cones sold? **Chocolate**
4. Which flavor sold exactly 3 cones? **Mint**
5. What is the combined number of chocolate cones and mint cones sold? **8**
6. Which flavor sold the best? **Cotton Candy**
7. How many more chocolate cones were sold than mint cones? **2**
8. How many fewer orange cones were sold than chocolate cones? **4**

Q 1. What is the difference between the histogram and the bar graph?

1) Histograms - Plot numerical data with range of the data grouped into intervals. Histograms are used to show distributions of variables.

2) Bar Chart - Plot categorical data
Bar Chart are used to compare variables.

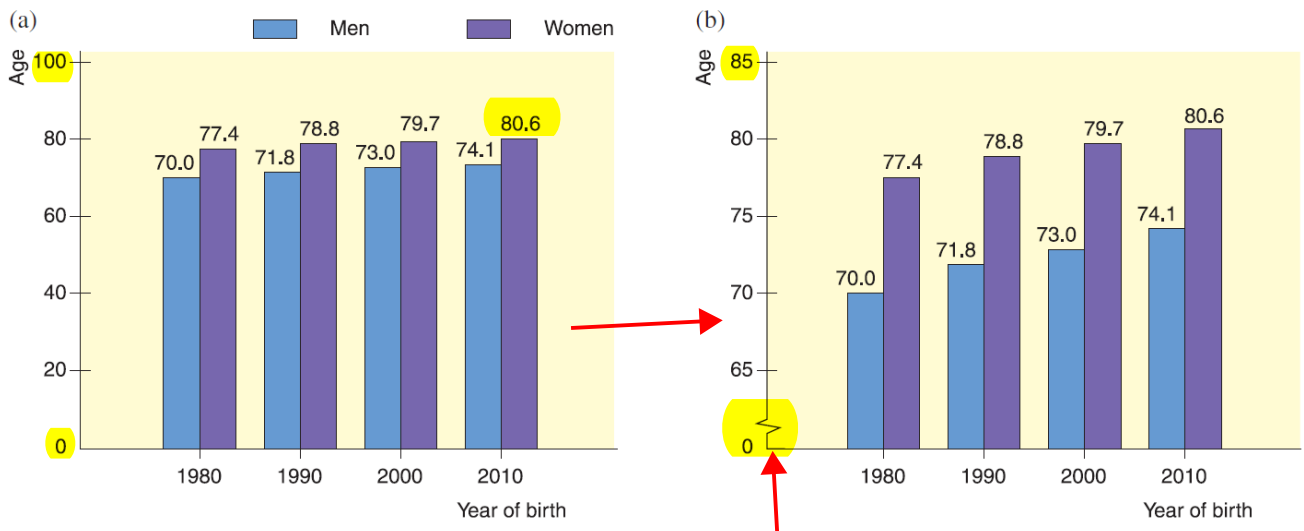
Example 2. Use the below graph to answer the questions.



1. On which day did the library receive the most visitors? **Saturday**
2. Approximately how many visitors came to the library that day? **290 or 295**
3. Why do you think that day had the most visitors? **Weekend**
4. Approximately how many visitors came to the library on Monday? **180 or 185**
5. Describe the pattern you see in the number of visitors from Wednesday to Saturday.

   Increased visitors from Wednesday to Saturday

Cluster Bar Graph

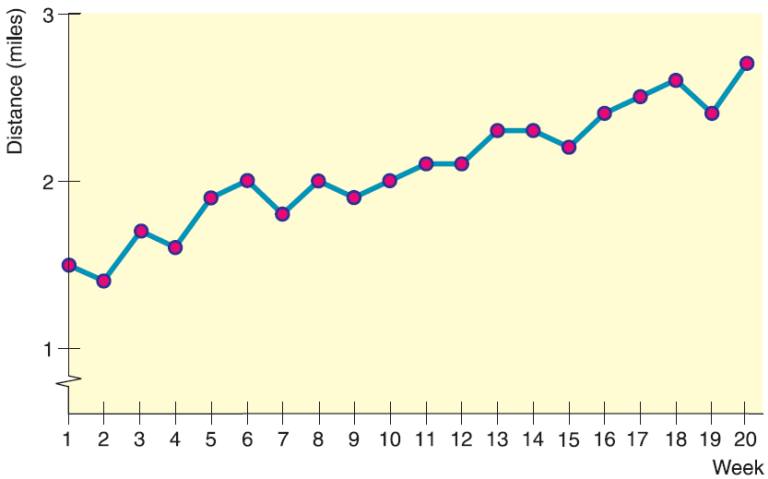


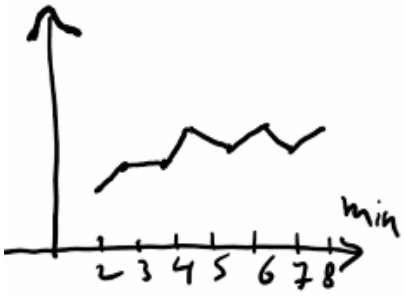
Remarks:

1) The above are call Cluster Bar Graphs because there are TWO BARS for EACH YEAR of birth.

2) Whenever you use a CHANGE IN SCALE in a graph, warn the viewer by using on the CHANGED AXIS.

Definition 2. A **time-series graph**, data are plotted in order of occurrence at regular intervals over a period of time.





Definition 3. In **a circle graph** (or pie chart), wedges of a circle visually display proportional parts of the total population that share a common characteristic.

Example 3. Here's an example of how to draw a pie chart from a frequency table.

Flavour	Number Sold (Frequency)
Vanilla	13
Banana	22
Chocolate	28
Strawberry	57

Step 1: Add the total number of ice cream sold. 13 + 22 + 28 + 57 = 120

Step 2: Find the angel per ice cream. 360/120 = 3

Sum of angels of circle

Step 3: Find the angel of ice cream.
Vanilla: 13 x 3 = 39 degree
Banana: 22 x 3 = 66 degree
Cholcate: 28 x 3 = 84 degree
Strawberry: 57 x 3 = 171 degree

= 360 degree