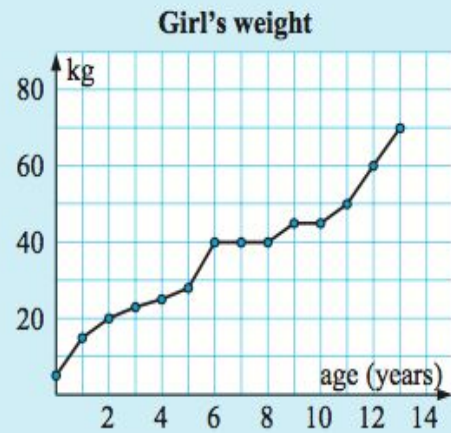


Example 10

The given graph shows the weight of a girl as recorded on her birthday each year. It is her birthday today. Estimate:

- a her weight at birth
- b her weight at age 10
- c her weight today
- d her weight increase from age 8 to 12.
- e What is the meaning of the graph between years 6 and 8?

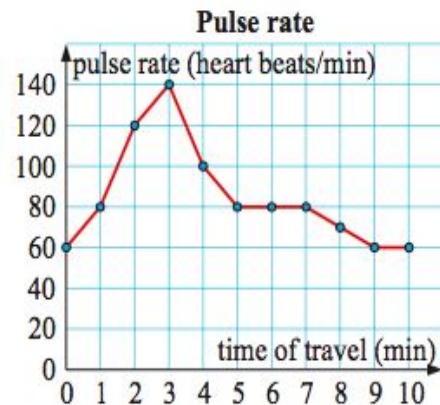


- a 3 kg b 45 kg c 70 kg d $60 - 40 = 20$ kg
- e The horizontal graph indicates no weight change during these birthdays (even though there would be fluctuations (changes) in weight during this period).

EXERCISE 12H

- 1 Kiri rides her bicycle to the shop. She has hooked up a device which measures her pulse rate. The data is later graphed over 1 minute time intervals.

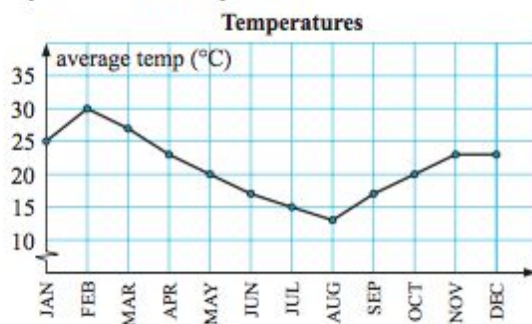
- a Find her pulse rate after 2 minutes.
- b Find her pulse rate after 7 minutes.
- c During what time intervals did her pulse rate increase?
- d Find the change in her pulse rate during the interval from 4 to 9 minutes.
- e What was her highest recorded pulse rate?
- f Is this a time series graph?



- 2 The rainfall for various months of the year is given in the following table:

Month	Ja	Fe	Ma	Ap	Ma	Ju	Ju	Au	Se	Oc	No	De
Rainfall (mm)	50	80	50	100	200	350	270	160	100	80	40	70

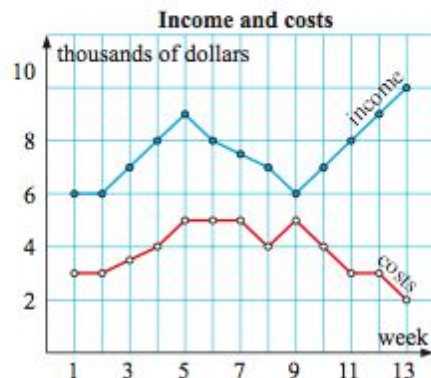
- Plot the data using a line graph with months on the horizontal axis.
 - During which period of 4 months did most rain fall?
 - What was the driest month?
 - What percentage of the year's rainfall fell in winter (June to August)?
- 3 The following graph gives the average maximum daily temperature for all months of the year for a country town.



- What is the meaning of on the temperature axis?
- Which month was the hottest?
- Which 4 month period was coldest?
- Why is the graph decreasing from February to August?
- Find the average of the monthly temperatures.

- 4 The following graph shows the income and costs of a small business over a 13 week period.

- What were the income and costs figures for week 5?
- What was the profit during week 5?
- During which period did the weekly income fall?
- Which week had the greatest profit:
 - in the first 6 weeks
 - in the entire 13 weeks?



ACTIVITY 2

DATA GATHERING



What to do:

- 1** Brainstorm a list of ways information is gathered.
- 2** Organise the list into categories such as questionnaires, face to face interviews, opinion polls, telephone surveys etc.
- 3** Organise a way of recording who provides the data i.e., adults, children, males, females etc.
- 4** Prepare a set of questions which every student in the class will use. Your aim is to find out:
 - a** which members of the households have been involved in providing data in the last 12 months
 - b** what methods were used to collect this data.



- 5** Have every student in your class use the prepared questions to interview every member of their household.
- 6** Decide on a time you want all the information collected by.
- 7** Collect all the information gathered by each student.
- 8** Organise and present the information in tables and graphs.
- 9** For one set of data draw a column graph and a pie chart.
- 10** Put titles and keys on all graphs and tables.
- 11** Discuss:
 - a** the results
 - b** how you could have improved the accuracy of the data gathering.

3 Use the line graph to answer the following questions:

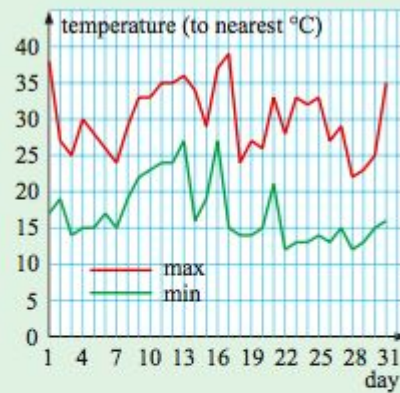
a On how many days was the minimum temperature:

- i** below 15°C **ii** above 20°C ?

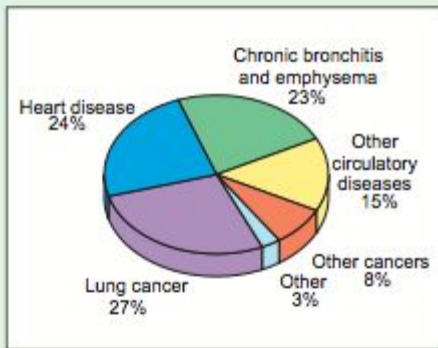
b On what day was the:

- i** highest maximum
ii lowest maximum
iii greatest difference between maximum and minimum
iv smallest difference between maximum and minimum?

c How many times did a daily minimum temperature exceed the lowest maximum for the month?



4



Use the circle graph alongside to answer the following questions:

- a** What was the major disease caused by smoking?
- b** What 2 groups of diseases made up 50% of all smoking related deaths.
- c** If 20 000 people died in one year as a result of smoking, how many died from:
- i** heart disease **ii** lung cancer
iii other cancers?

5 A medal is awarded to the best and fairest player in a national sporting competition. Umpires award 3 votes to the player they feel was the best and fairest in each game. 2 votes are awarded for second best and 1 vote for the third best.

Listed below are the votes awarded to a recent winner. The first vote from the left was for the first game, the second vote was for the second game etc.

0 2 0 3 1 0 3 2 3 1 1 3 2 0 3 2 1 0 3 2

- a** Use the tally method to prepare a frequency chart to show the votes awarded to the winner for each game.
- b** Draw a bar graph to show the frequency of the votes.
- c** In how many games did the winner not receive votes?
- d** What was the winner's total vote?
- e** What was the **i** mode **ii** mean **iii** median of the winner's votes?