SCORE

Data & Measurement
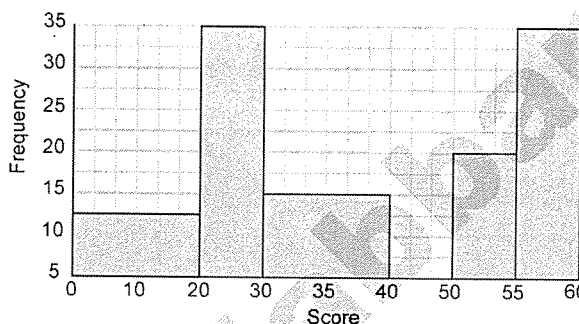## with Classified
answer book

8

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8- Misrepresentation of Data

1 The grouped frequency table and histogram below show the scores hit per dart by a darts player during a match.
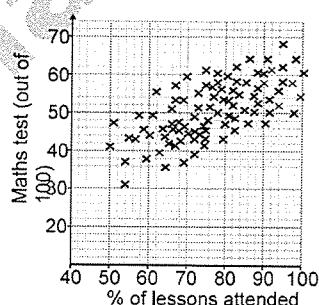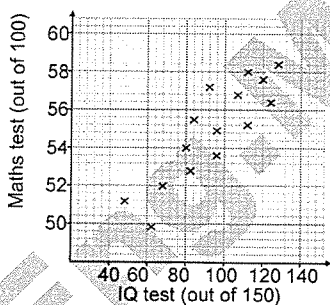
Score (s)	Frequency
$0 < s \leq 20$	13
$20 < s \leq 30$	35
$30 < s \leq 40$	15
$40 < s \leq 50$	3
$50 < s \leq 55$	20
$55 < s \leq 60$	35

a) Give four criticisms of the histogram.
Draw a more appropriate histogram.

b) Would a pie chart be a good way to represent this data?
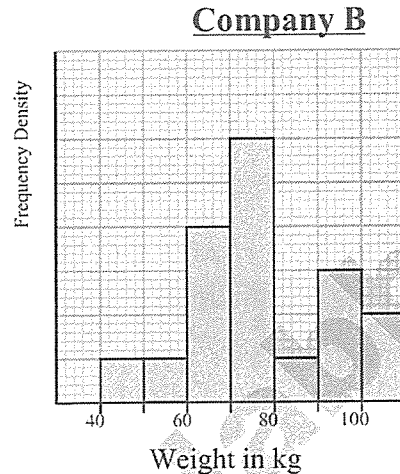Explain your answer.

**2** The scatter graphs below show how the scores on a maths test relate to both the score on an IQ test and the percentage of maths lesson attended.

a) Describe the correlation shown by each of the scatter graphs.

b) Jenny says, "Maths test scores aremore closely correlated with IQ test scores than with percentage of lessons attended." Do the scatter graphs support her claim? Explain your answer.

3 The histograms below show information about the weights of employees at company A and company B.
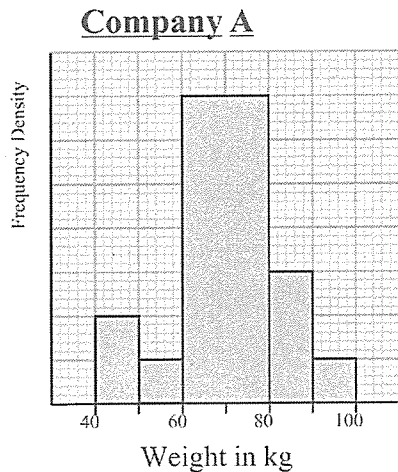
Company A

Company B

a) Petra says, "More people in company A were between 60 kg and 80 kg than incompany B."

Is Petra's statement correct? Explain your answer.

**b)** Gary claims that the range of weights of employees in company B is exactly 10 kg more than the weights of employees in company A. Is Gary likely to be correct? Explain your answer.

c) In which company is the median weight of the employees the greatest? Explain your answer.

4 Harry want to investigate whether the population of the city where he lives has tripled between 1915 and 2015.

He sees this line graph on the internet showing the city's population.

**Population 1915 to 2015**
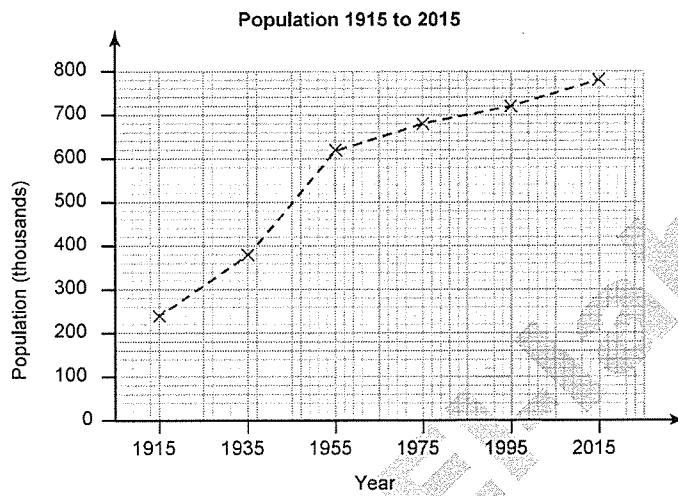
Use the information in the line graph to make a conclusion about whether the population of the city has tripled or not. Show how you reached your conclusion.

5 90 students in a school each had to choose one of these subjects to study next year: Art, Music, Cookery or Dance.

The pie chart shows the choices that these 90 students made.

Subjects chosen by 90 pupils
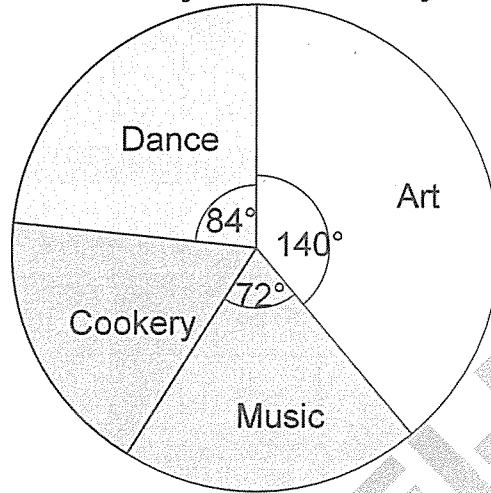
Explain whether each of these statements is true or false.

a) The angle for cookery on the pie chart is 64°.

b) More people chose Music than Dance.

c) More than twice as many people chose Art than Music.

d) 21 people chose Dance.

6. The chart shows the cost of a winter holiday in Spain.

Key: ■ two weeks
     ▨ one week
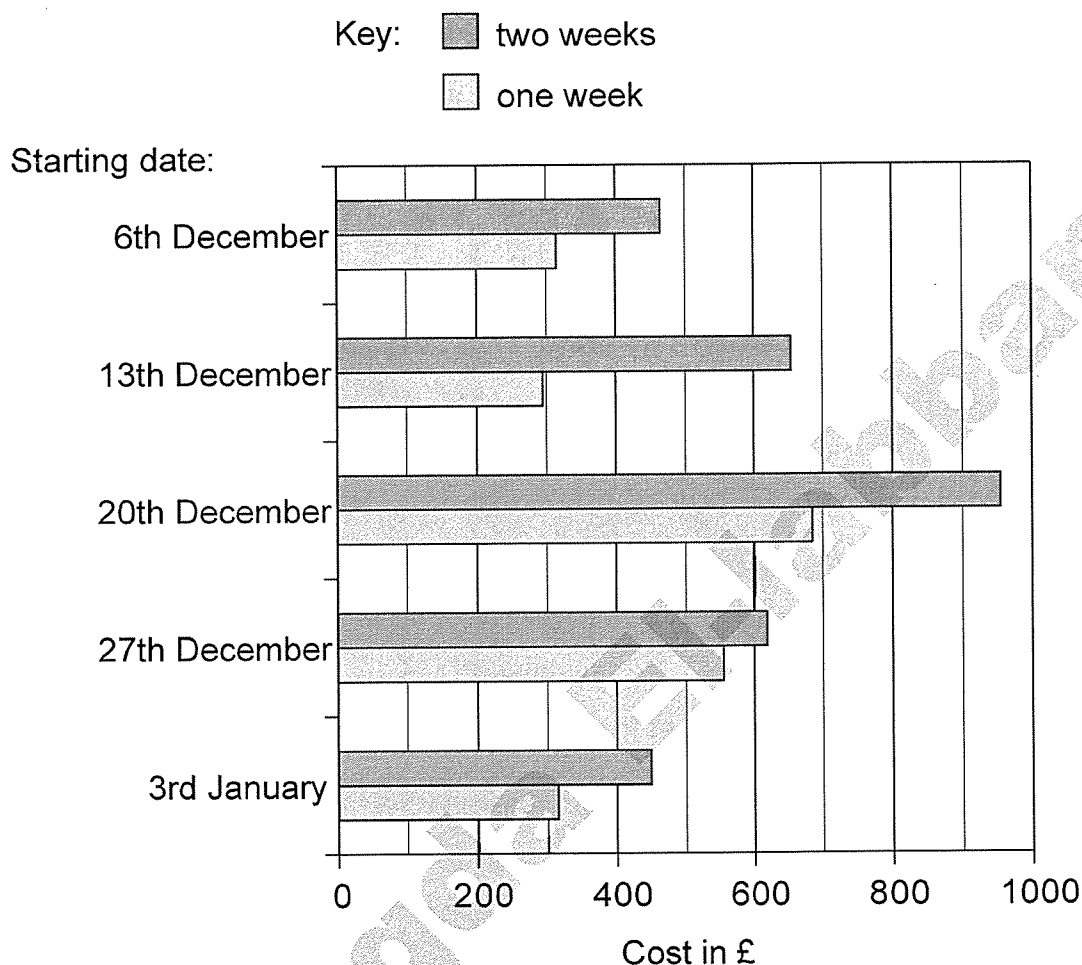
(a) What is the **starting date** of the **most expensive** holiday?

....

(b) Meg is booking a holiday with starting date **27th December**.

About **how much more** will a two week holiday
cost than a one week holiday?

£

9 (a) Here is a bar chart showing the scores of five students in their Maths and English tests.
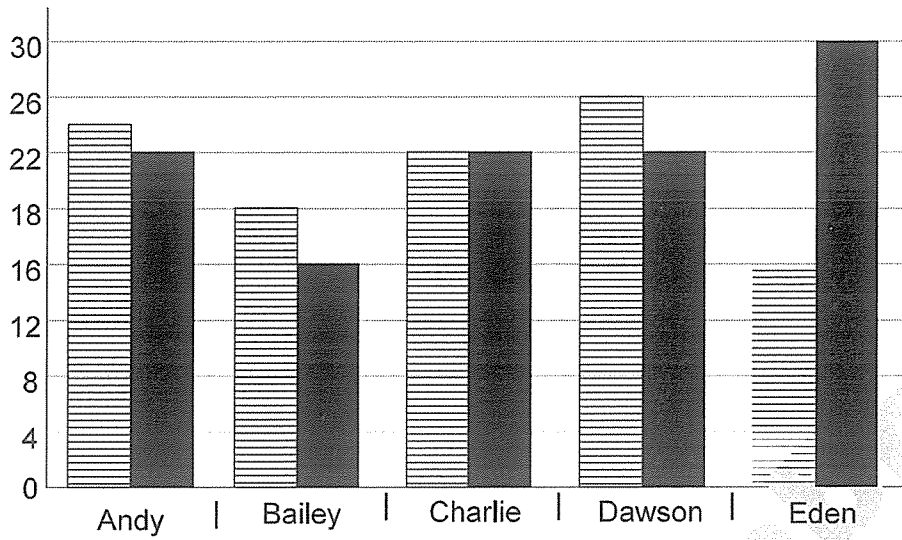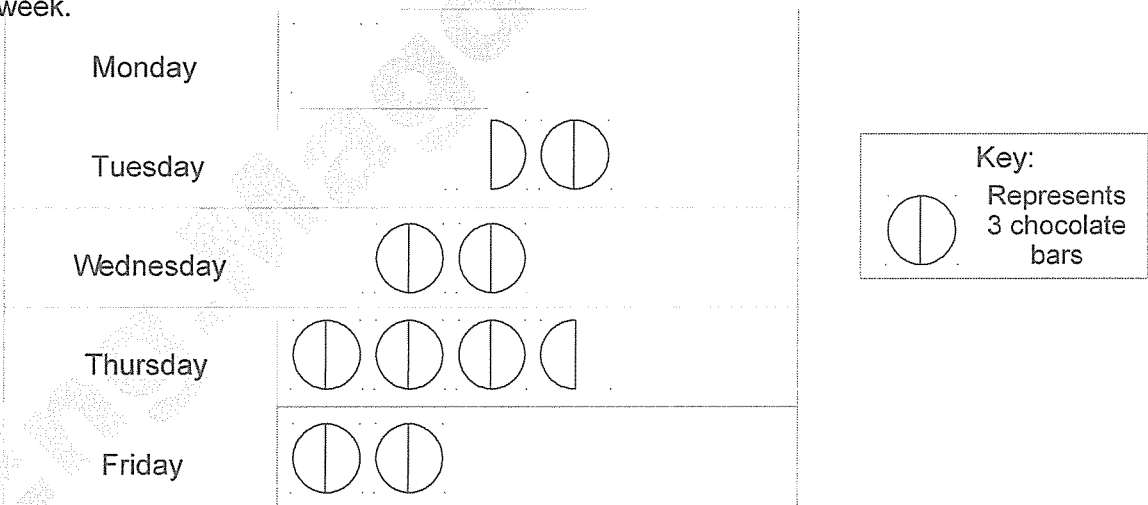

Write down two things wrong with this graph

1 ....

2 ....

(b) The pictogram gives information about the number of chocolate bars sold by a shop last week.

Key:
Represents 3 chocolate bars

(b) Write down one thing that is wrong with the pictogram.

....

....

10 Lily is trying to find out if boys or girls scored generally higher marks in a test.
She decides to find the mode, the mean and the range for each group.
Here are the results of her calculations.

	Boys	Girls
Mode	52	41
Mean	38.4	41.2
Range	40	36

Put a tick (✓) next to the group with the generally higher marks.

Boys [   ]   Girls [   ]

Explain your answer.

....

....

Girls ticked
and
A correct explanation involving the mean, e.g.

- They have a higher mean.
- The mean shows which is generally higher.