

8300

GCSE MATHEMATICS

Foundation tier – Questions by Topic

Statistics

Interpreting bar charts

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments

Information

- The marks for questions are shown in brackets

Advice

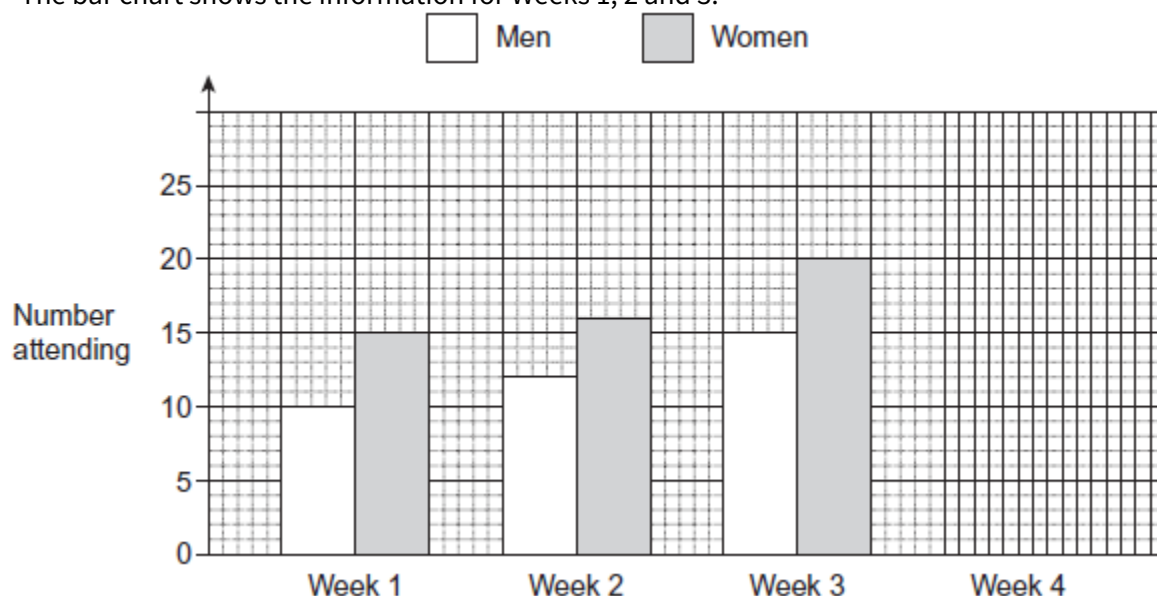
- In all calculations, show clearly how you work out your answer

For questions 1 to 10 you must **NOT** use a calculator.



Q1.

Alison records how many men and women attend her fitness class over four weeks.
The bar chart shows the information for Weeks 1, 2 and 3.



- (a) How many **men** attended in Week 2?

Answer _____

(1)

- (b) How many people attended in Week 3 **altogether**?

Answer _____

(1)

- (c) 40 people attended the class in Week 4.
There were 8 **more** women than men.
Complete the bar chart for Week 4.

(2)

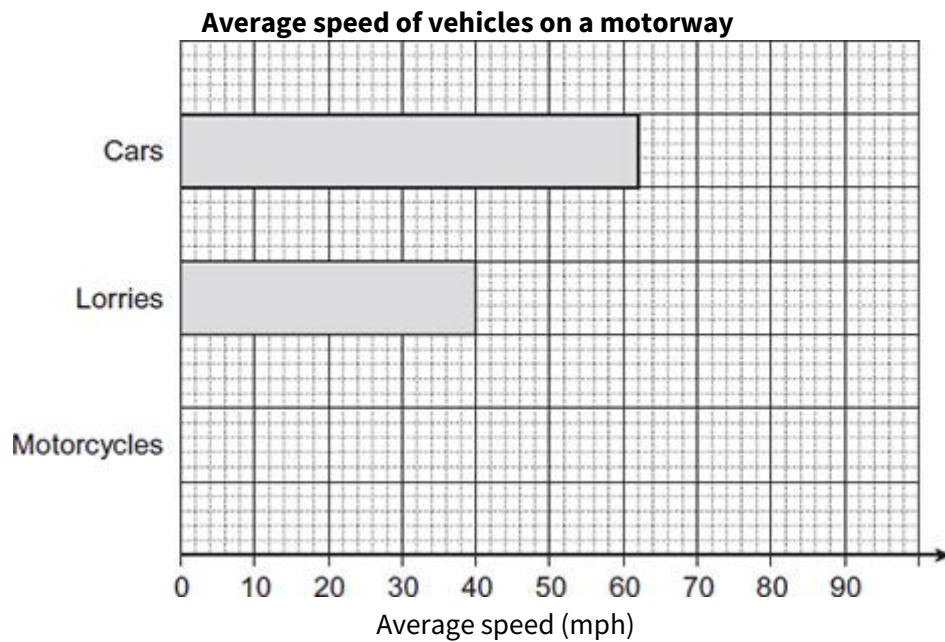
- (d) Each week,
 - Alison pays out £30 to run the class
 - she charges each person £5 to attend.
How much profit did she make in Week 1?

Answer £ _____

(3)

(Total 7 marks)

Q2.



- (a) The average speed of motorcycles is 68 mph.
Complete the chart for motorcycles.

(1)

- (b) Write down the average speed of cars.

Answer _____ mph

(1)

- (c) Work out the difference between the average speed of cars and lorries.

Answer _____ mph

(1)

- (d) Harry says,
'**All** cars travel faster than lorries on this motorway.'
Is he correct?
Give a reason for your answer.

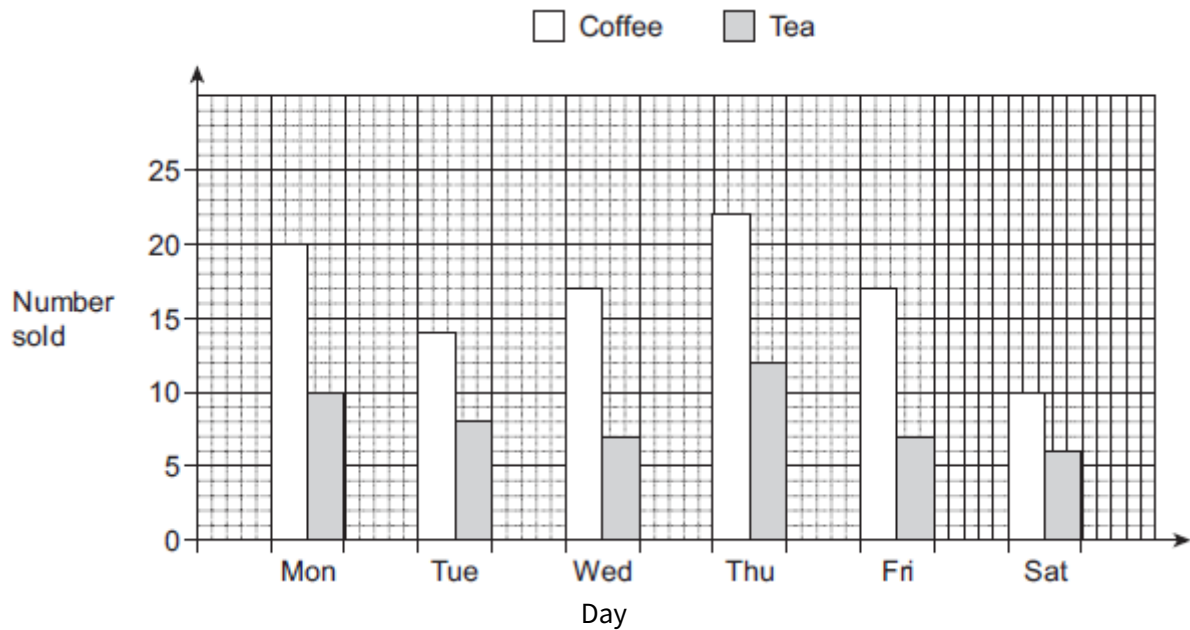
(1)

(Total 4 marks)

Q3.

A café sells coffee and tea.

The numbers sold for one week are shown.



- (a) How many teas were sold on **Monday**?

Answer _____

(1)

- (b) Coffee costs £1.20

Tea costs £1.00

How much money did the café take from coffee and tea sales on **Saturday**?

Answer £ _____

(3)

- (a) 100 coffees were sold that week.

Was coffee twice as popular as tea?

You **must** show your working.

(3)

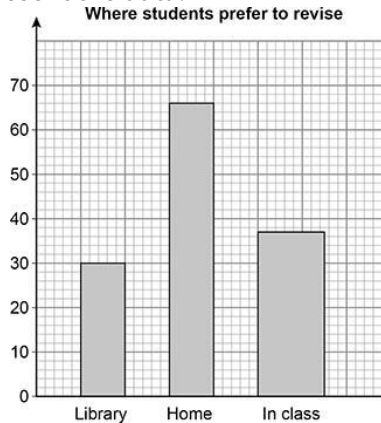
(Total 7 marks)

Q4.

The table shows information about where students prefer to revise.

Library	Home	In class
30	68	37

Ed draws this bar chart to represent the data.



Write down **three** mistakes he has made.

Mistake 1 _____

Mistake 2 _____

Mistake 3 _____

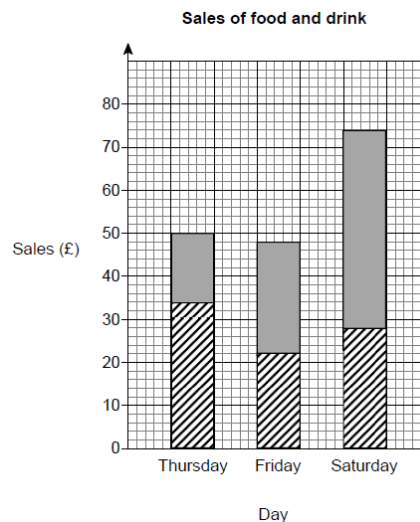
(Total 3 marks)

Q5.

The table shows the sales of food and drink for three days at a market stall.

Day	Sales of food (£)	Sales of drink (£)
Thursday	34	16
Friday	22	48
Saturday	46	28

Hannah uses this information to draw a composite bar chart.



Write down **three** different mistakes that she has made.

Mistake 1 _____

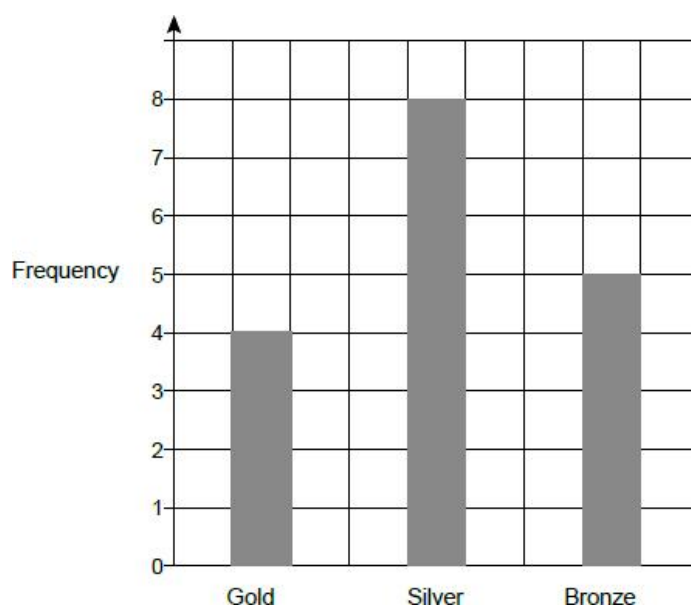
Mistake 2 _____

Mistake 3 _____

(Total 3 marks)

Q6.

The bar chart shows information about the medals won by Kenya at the Commonwealth Games.



Show the information in a pictogram.

Use the key given.

Key :  represents 2 medals

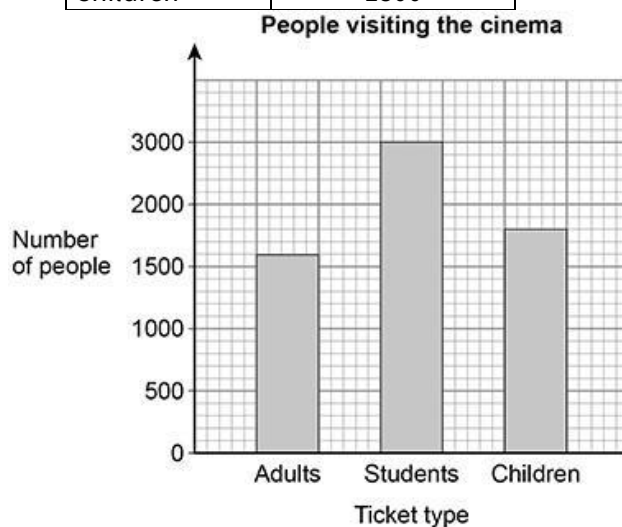
Gold	
Silver	
Bronze	

(Total 3 marks)

Q7.

A bar chart is drawn to show the number of people visiting a cinema one month.

Ticket type	Number of people
Adults	1600
Students	3000
Children	1800



Give **one** criticism of the bar chart.

(Total 1 mark)

Q8.

What does the longest bar in a bar chart represent?
Circle your answer.

mean

median

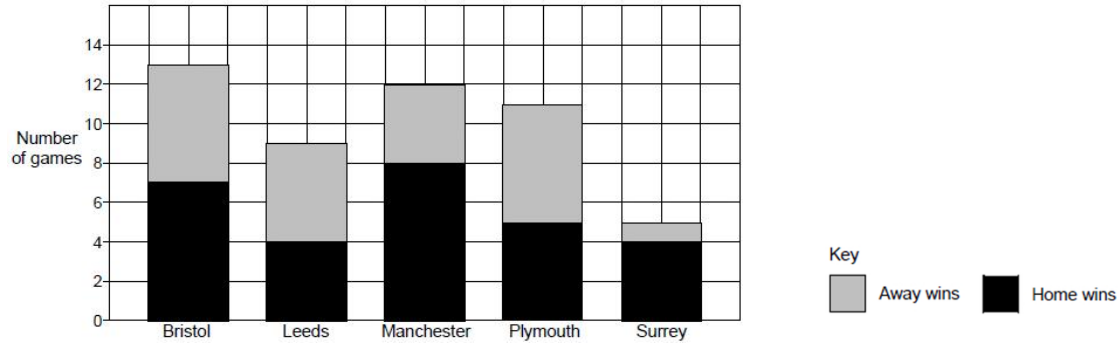
mode

range

(Total 1 mark)

Q9.

Here is information about five basketball teams.



(a) Which team had the most **home** wins?

Answer _____

(1)

(b) Which **two** teams had the same number of away wins?

Answer _____ and _____

(1)

(c) How many **more** home wins than away wins were there altogether?

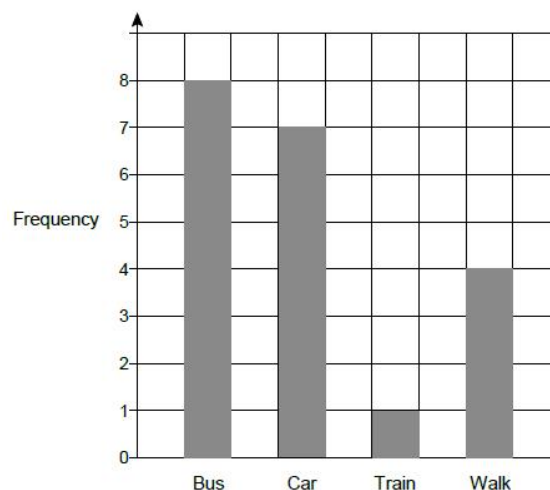
Answer _____

(3)

(Total 5 marks)

Q10.

The bar chart shows information about how 20 students travel to school.



Show the information in a pictogram.

Use the key given.

Bus	
Car	
Train	
Walk	

Key : ○ represents 2 students

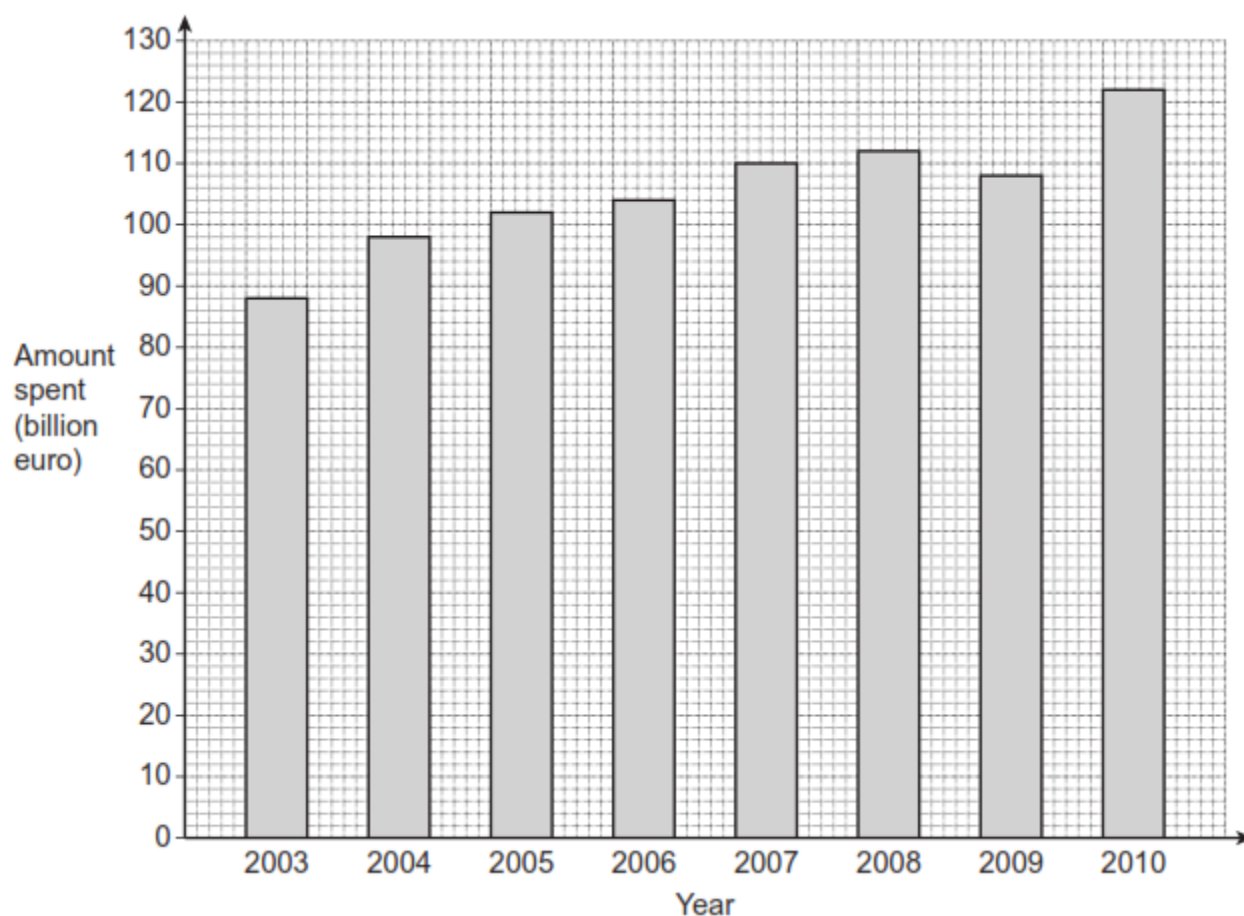
(Total 3 marks)

For the rest of the questions, you may use a calculator.



Q11.

The graph shows the amount spent by the European Union.



- (a) Which of these years was the first that over 100 billion euro was spent?

Answer _____

(1)

- (b) In which year did the amount spent fall?

Answer _____

(1)

- (c) $\frac{9}{20}$ of the amount spent in 2007 was on farming.
How much was spent in 2007 on farming?

Answer _____ billion euro

(3)

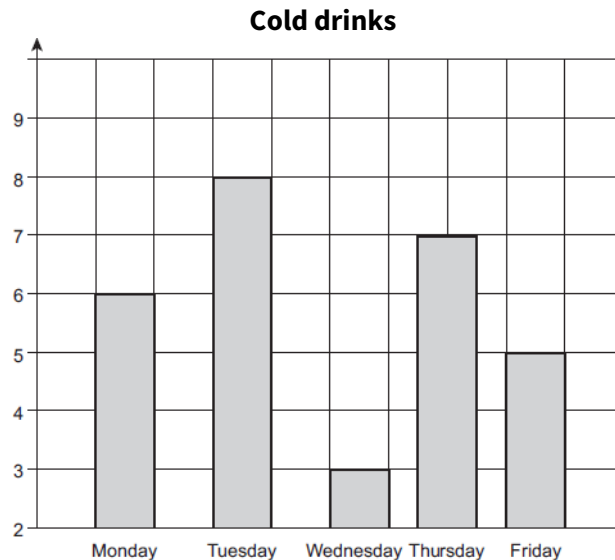
(Total 5 marks)

Q12.

Jon records the number of cold drinks he has each day.

	Monday	Tuesday	Wednesday	Thursday	Friday
Number of cold drinks	6	8	3	7	5

He uses the information to draw this bar chart.



Write down **three** mistakes that he has made.

Mistake 1 _____

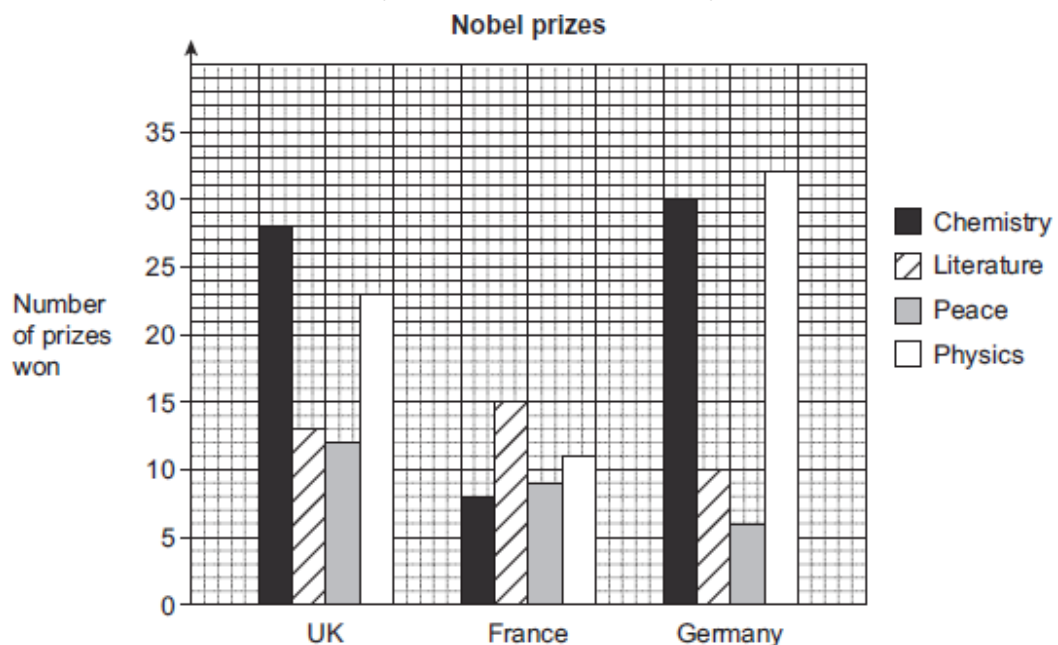
Mistake 2 _____

Mistake 3 _____

(Total 3 marks)

Q13.

Nobel prizes are won for Chemistry, Literature, Peace and Physics.



- (a) List these countries in order of the number of Chemistry prizes won.
Start with the country that has won the most.

1 _____

2 _____

3 _____

(2)

(b) How many Peace prizes has France won?

Answer _____

(1)

(c) Which of these countries has won the most prizes in total?

You **must** show your working.

Answer _____

(3)

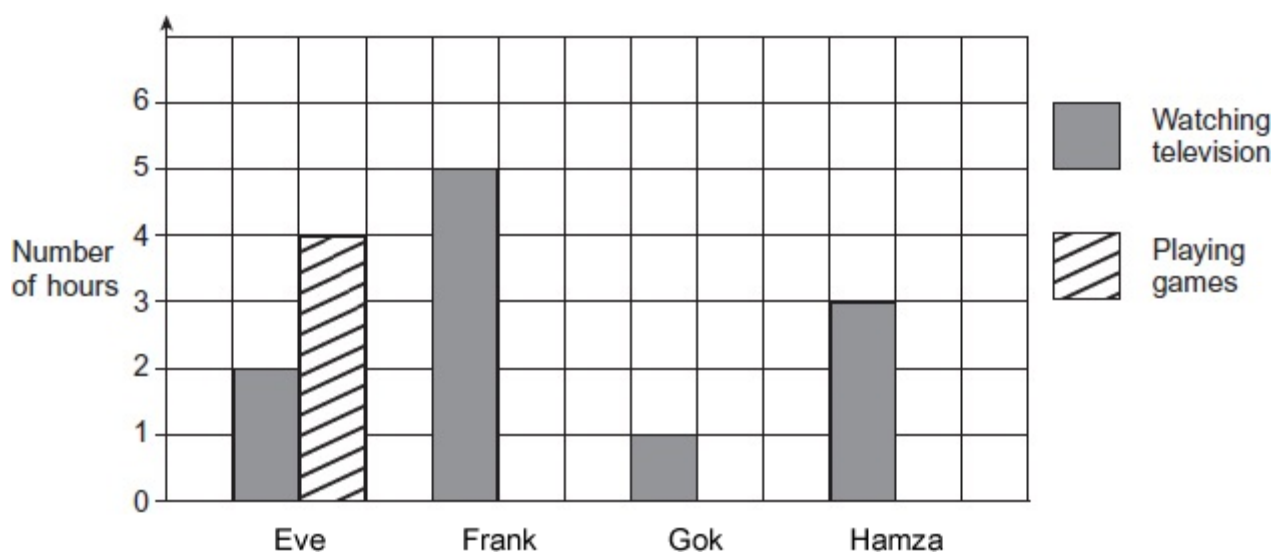
(Total 6 marks)

Q14.

Four children recorded the hours they spent watching television and playing games.

(a) Use the information in the table to complete the dual bar chart.

	Number of hours playing games
Eve	4
Frank	6
Gok	5
Hamza	1



(2)

(b) Who watched television for 5 hours?

Answer _____

(1)

(c) Who spent **more** time watching television than playing games?

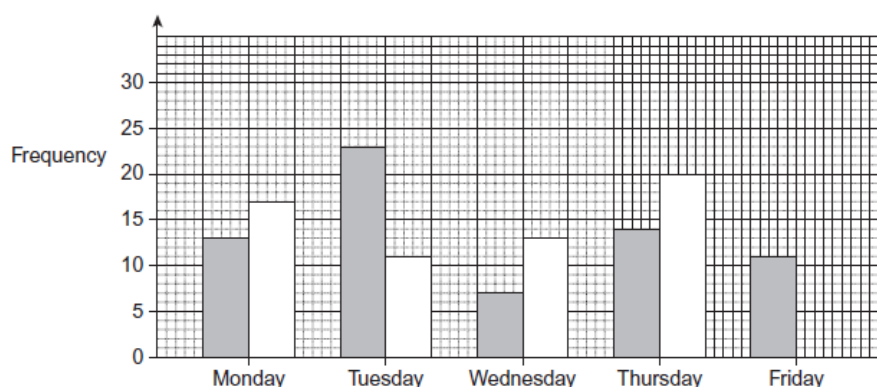
Answer _____

(1)

(Total 4 marks)

Q15.

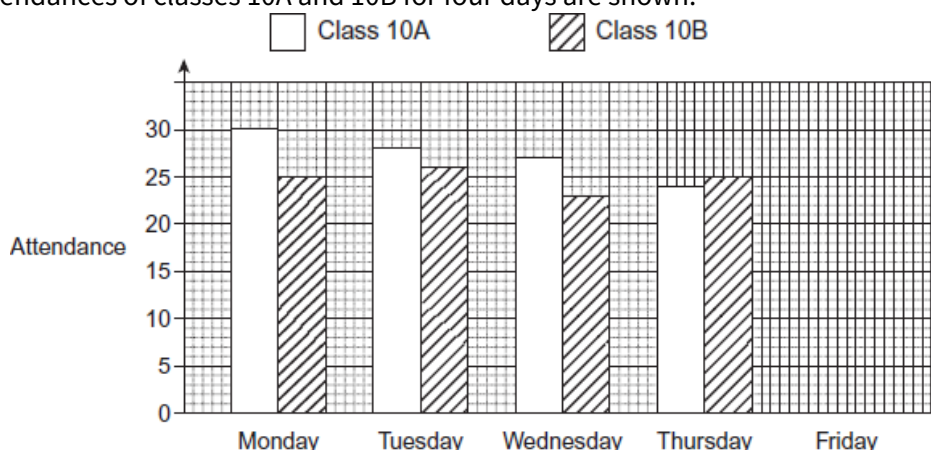
The bar chart shows the number of dogs and cats taken to a vet one week.
The bar for cats on Friday is missing. = dogs = cats



- (a) How many dogs were taken to the vet on Tuesday? (1)
 - (b) Work out the total number of dogs and cats taken to the vet on Monday. (1)
 - (c) In this week, an equal number of dogs and cats were taken to the vet.
How many cats were taken to the vet on Friday? (4)
- (Total 6 marks)**

Q16.

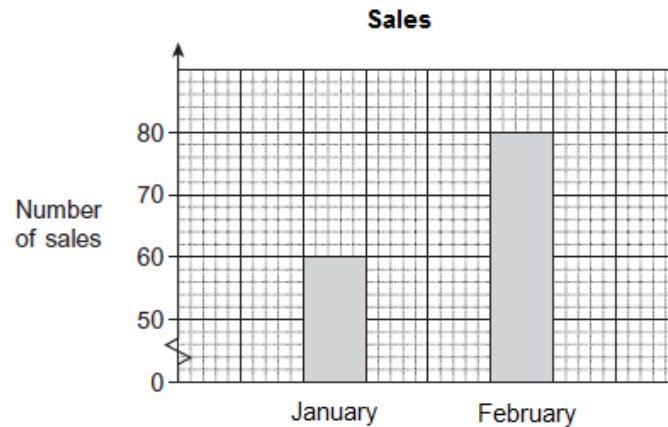
The attendances of classes 10A and 10B for four days are shown.



- (a) How many students from 10A attended school on **Tuesday**? (1)
 - (b) How many more students from 10A than 10B attended school on **Wednesday**? (2)
 - (c) On which of the four days was the **total** attendance of classes 10A and 10B the highest? (1)
 - (d) On Friday the total attendance of classes 10A and 10B was 43.
Three more students attended in 10B than in 10A.
Complete the bar chart for Friday. (3)
- (Total 7 marks)**

Q17.

A company recorded the number of sales each month.



Tracey says,

“The number of sales doubled from January to February.”

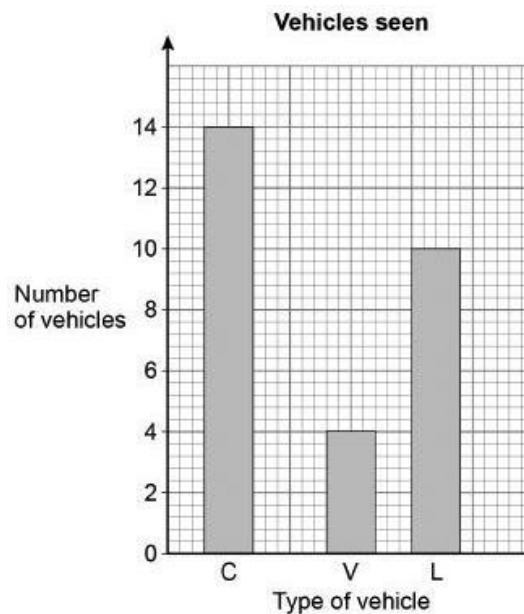
Is she correct?

Show how you decide.

(Total 2 marks)

Q18.

On a journey, Laura sees 30 vehicles. Each vehicle is a car, a van or a lorry.
She draws this bar chart.



Make **two** criticisms of her bar chart.

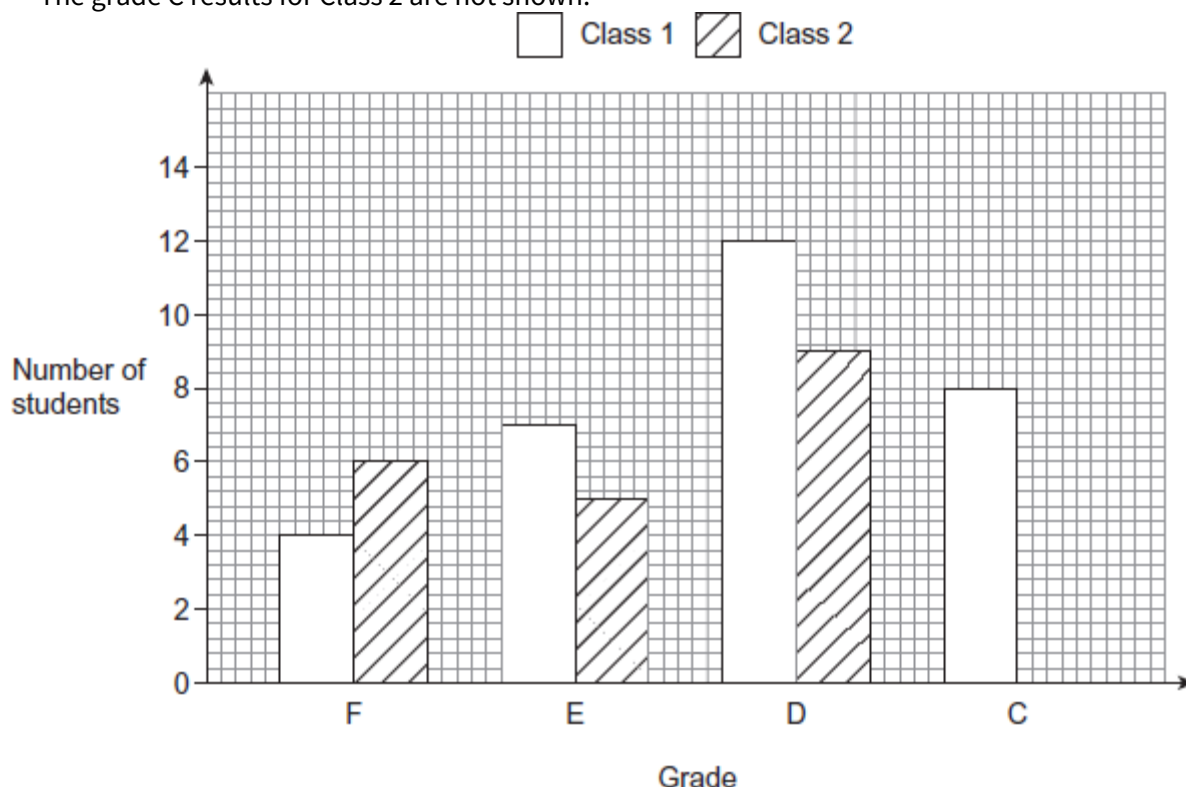
Criticism 1 _____

Criticism 2 _____

(Total 2 marks)

Q19.

A teacher records the grades gained in a test by students in two classes.
The dual bar chart shows the results.
The grade C results for Class 2 are not shown.



- (a) How many students in Class 2 gained a grade D?

Answer _____

(1)

- (b) Work out how many students in **total** gained a grade F.

Answer _____

(1)

- (c) How many **more** students gained a grade E in Class 1 than in Class 2?

Answer _____

(1)

- (d) Class 2 has the same number of students as Class 1

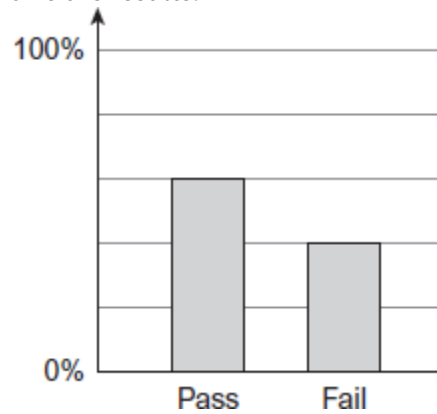
Complete the dual bar chart for grade C.

(4)

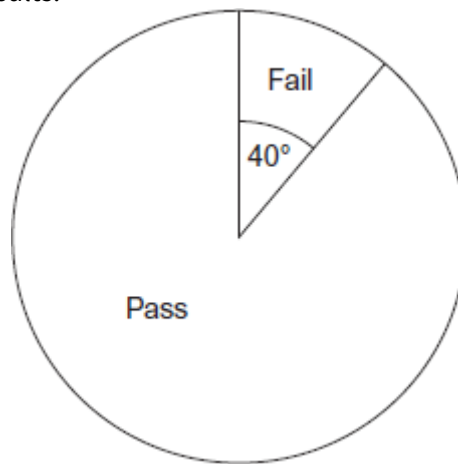
(Total 7 marks)

Q20.

Some students take a cycling test.
The percentage bar chart shows the results.



The students who fail the test take it a second time.
The pie chart shows the results.



Two students fail the second test.
How many students pass the test first time?

Answer _____

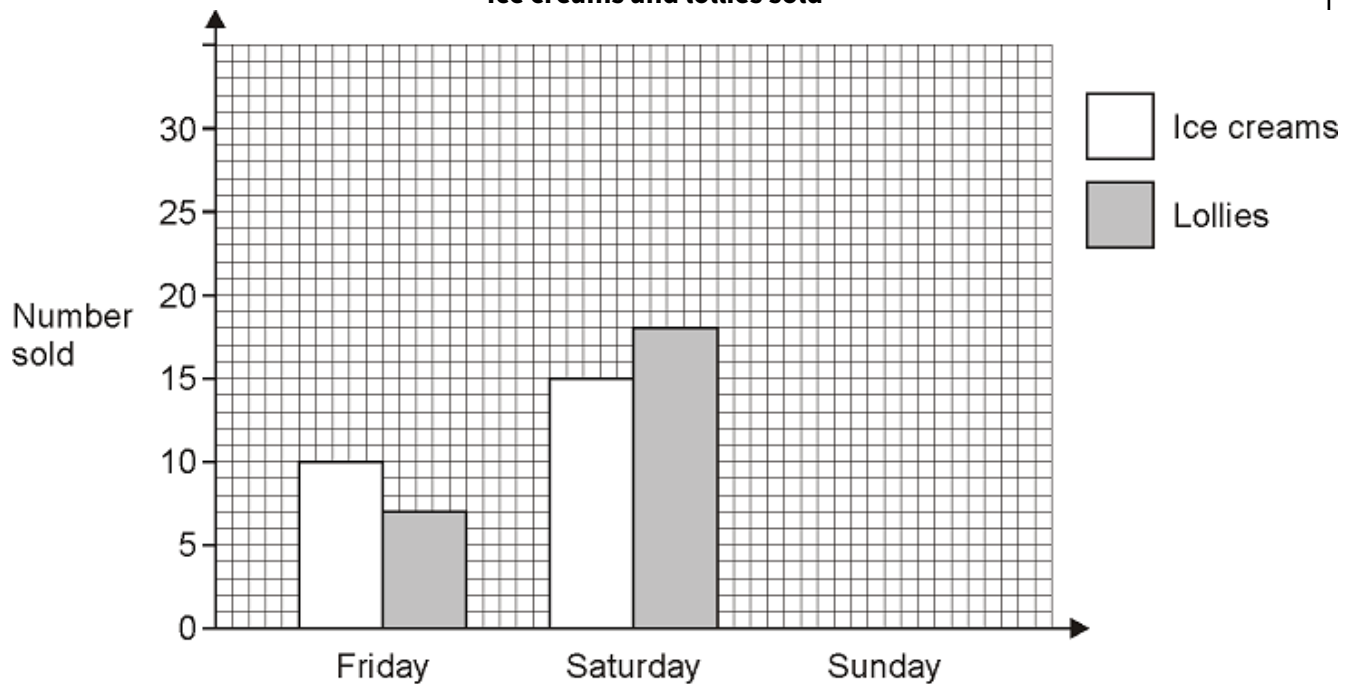
(Total 5 marks)

Q21.

Mira sells ice creams and lollies.

The bar chart shows the number sold on Friday and Saturday.

Ice creams and lollies sold



- (a) An ice cream costs £1.20
A lolly costs 80p.
How much money did Mira take from selling ice creams **and** lollies on **Friday**?

Answer £ _____

(3)

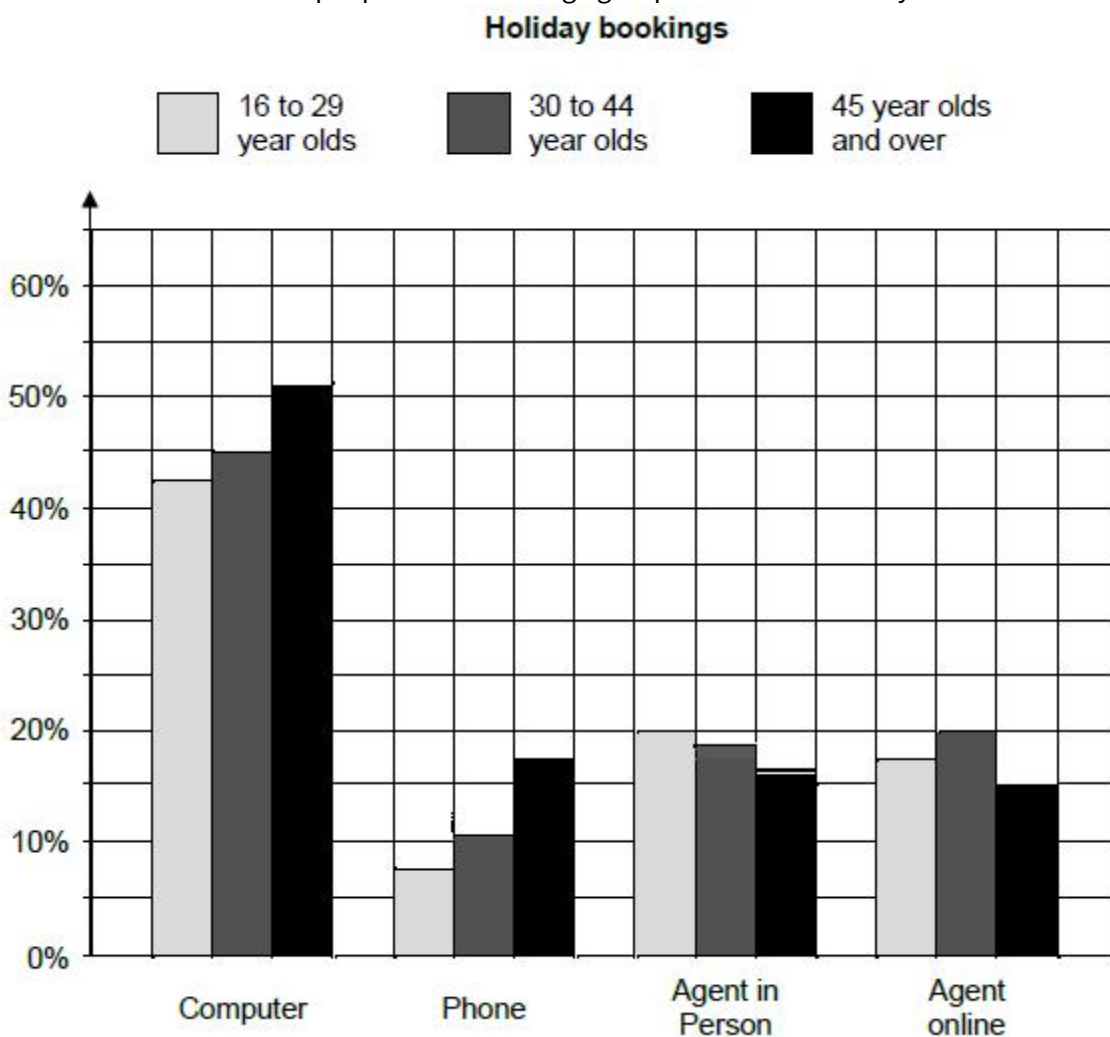
- (b) Mira sold ice creams and lollies on Friday, Saturday and Sunday.
Altogether she sold 80.
On Sunday, she sold 2 **more** lollies than ice creams.
Complete the bar chart for Sunday.

(3)

(Total 6 marks)

Q22.

The bar chart shows how people in different age groups book their holidays.



- (a) Which **two** ways of booking are most popular for 16 to 29 year olds?

Answer and

(2)

- (b) In total, what percentage of 16 to 29 year olds booked with an agent?

Give your answer to the nearest 10%

Answer %

(2)

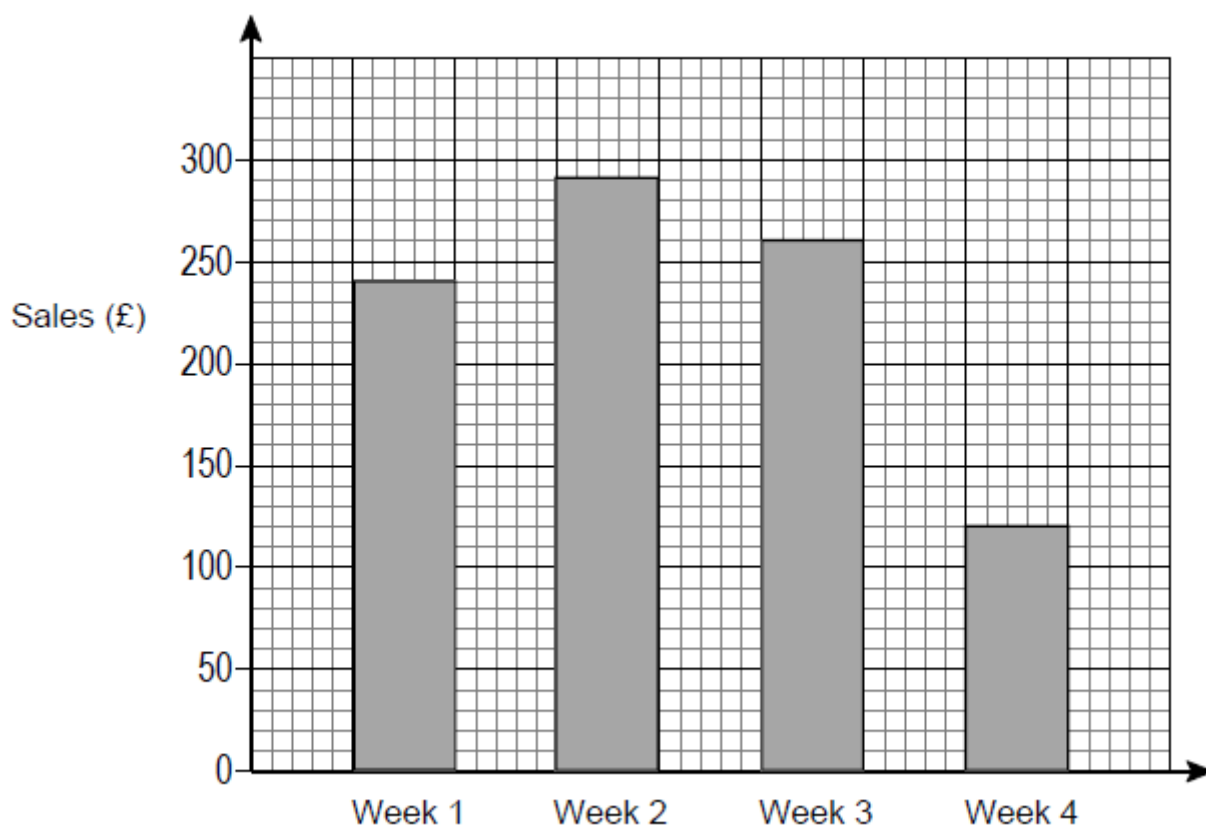
- (c) Compare the bookings for 30 to 44 year olds with the bookings for 45 year olds and over.

(2)

(Total 6 marks)

Q23.

Zayn records his weekly sales.



Every week his costs are £87.50

(a) Work out his profit in Week 1

Answer £ _____

(2)

(b) His sales in Week 4 were half of his sales in Week 1

Zayn says,

“This means that my profit in Week 4 was half of my profit in Week 1”

Is he correct?

You **must** show your working.

(2)

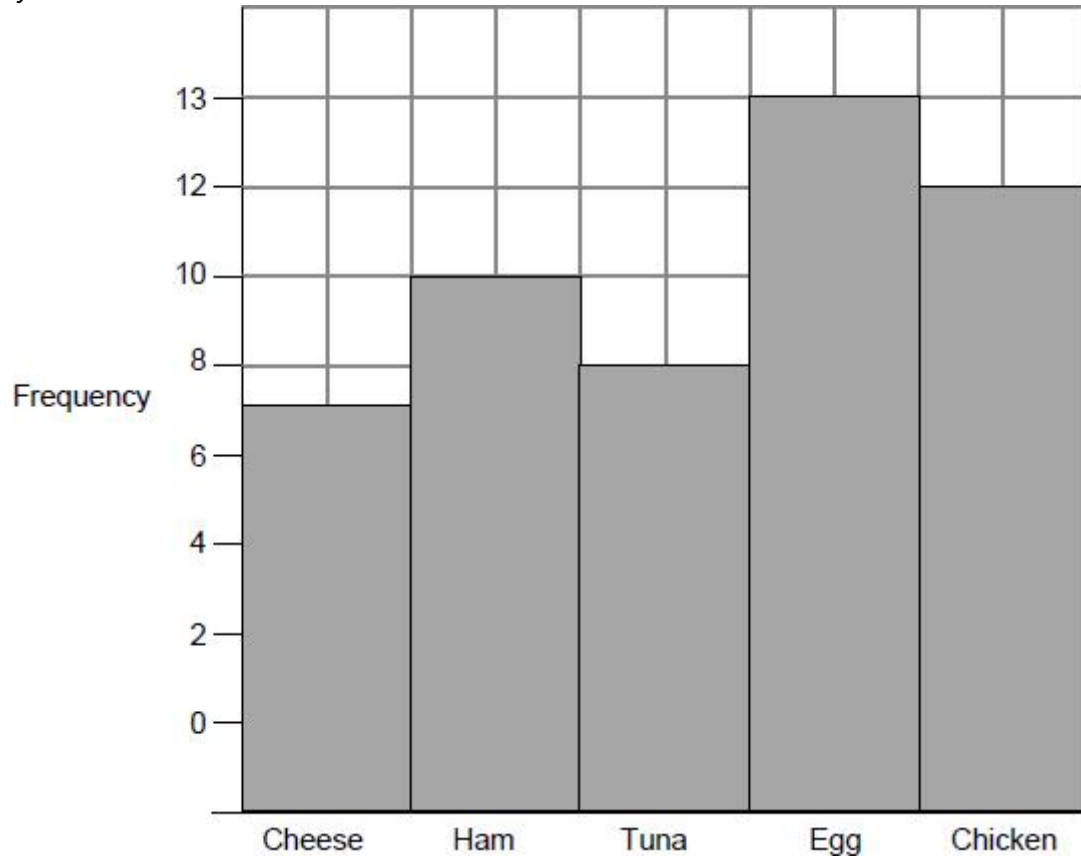
(Total 4 marks)

Q24.

The table shows the number of different type of sandwiches sold in a café in one morning.

	Ham	Cheese	Tuna	Egg	Chicken
Number sold	7	10	8	13	12

Lily uses this information to draw a bar chart.



Write down **two** mistakes that she has made.

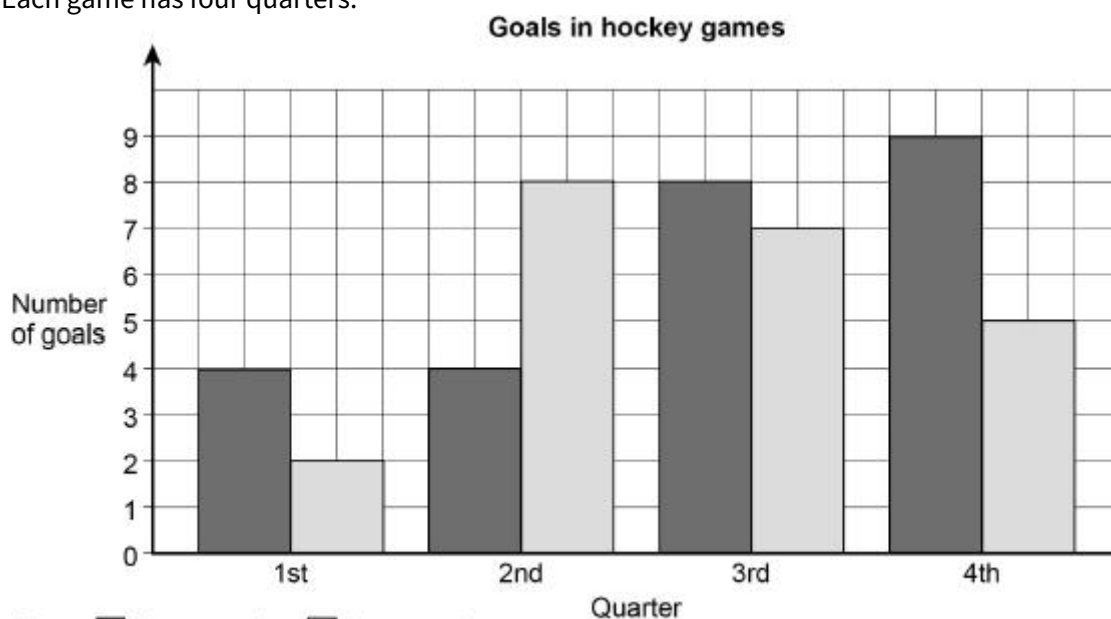
Mistake 1 _____

Mistake 2 _____

(Total 2 marks)

Q25.

Here is information about the goals scored in some hockey games.
Each game has four quarters.



- (a) Which quarter was the mode for **away** goals?

Circle your answer.

1st 2nd 3rd 4th

(1)

- (b) There were 10 games.

Work out the mean number of goals per game.

Answer _____

(2)

- (c) In total, how many **more** home goals were scored than away goals?

Answer _____

(2)

- (d) Rob says,

“More home teams **must** have won because there were more home goals.”

Is he correct?

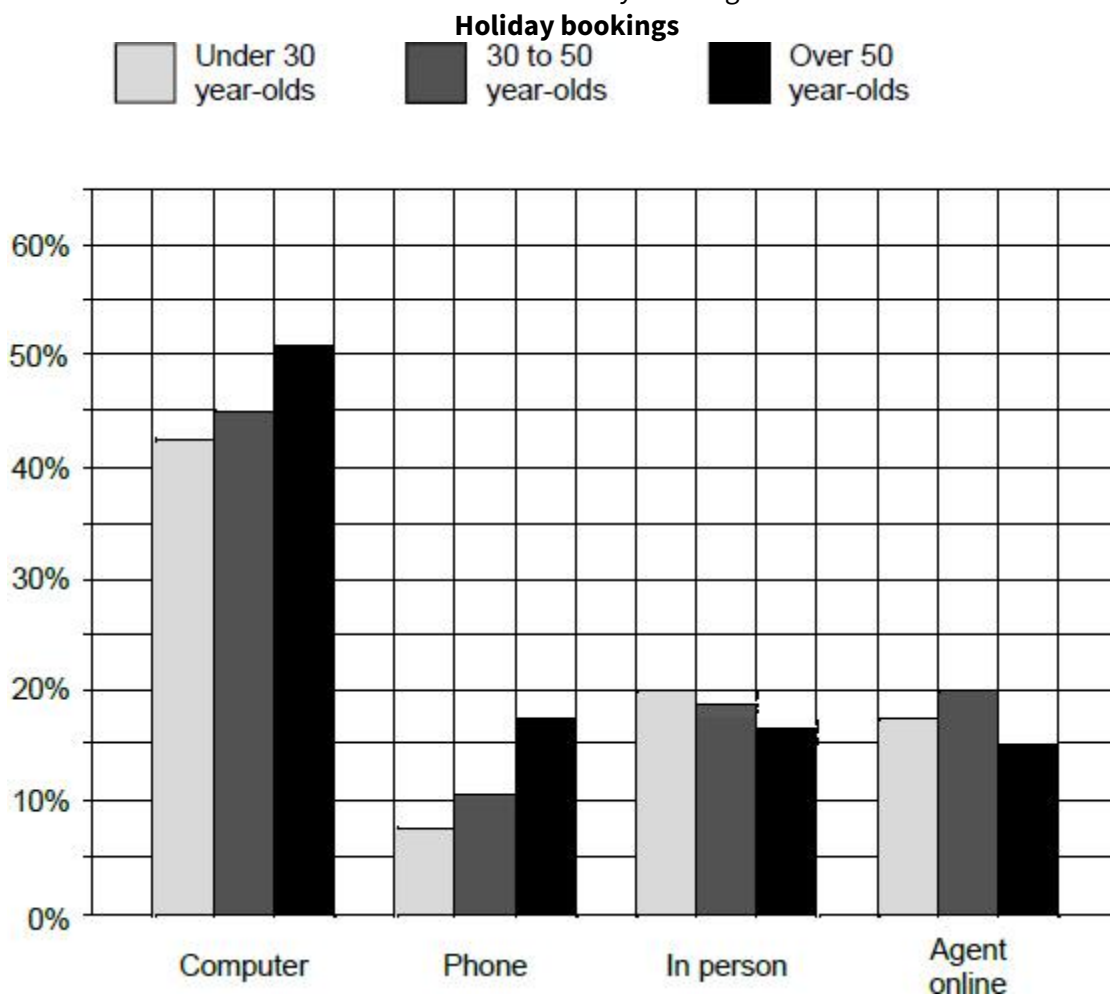
Give a reason for your answer.

(1)

(Total 6 marks)

Q26.

The bar chart shows information about how holiday bookings are made.



- (a) Which **two** ways of booking are most popular for under 30 year-olds?
 Answer _____ and _____

(2)

- (b) In total, what percentage of 30 to 50 year-olds booked in person or with an agent online?
 Give your answer to the nearest 10%

Answer _____ %

(2)

- (c) Make **two** comparisons of the data for 30 to 50 year-olds with 50 year-olds and over.

Comparison 1 _____

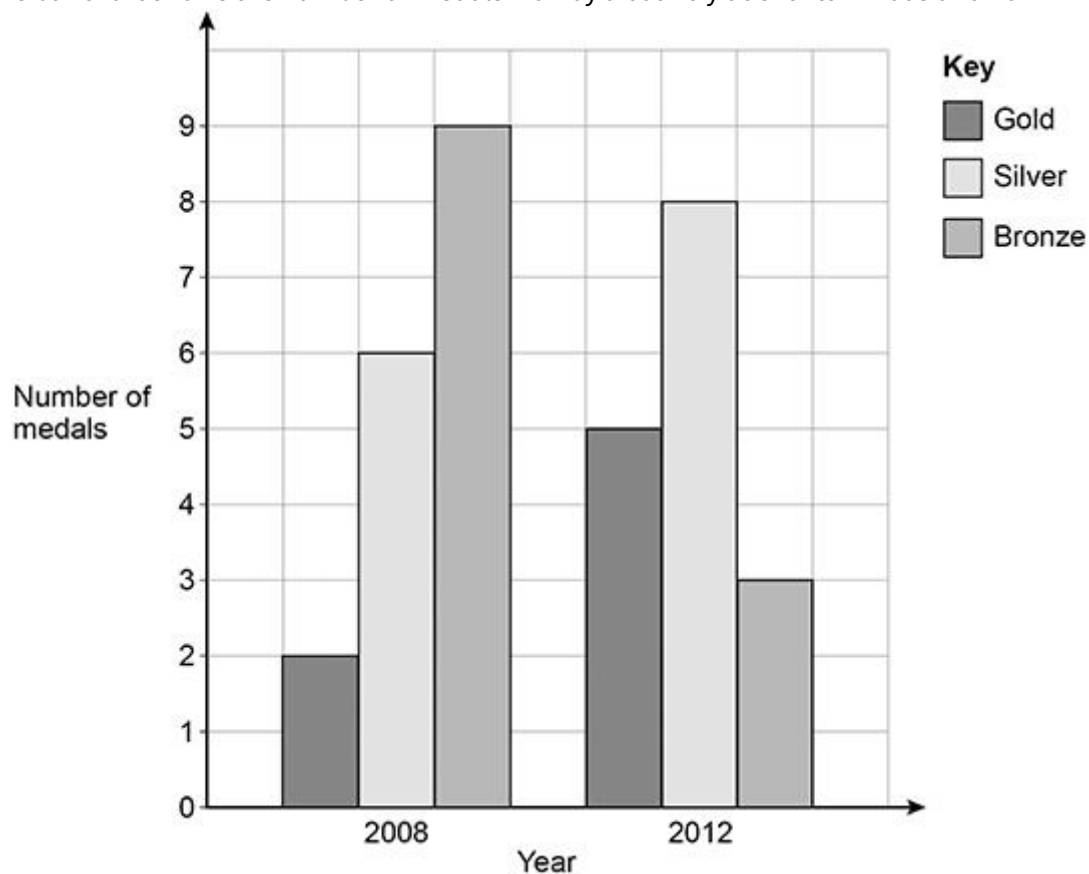
Comparison 2 _____

(2)

(Total 6 marks)

Q27.

The bar chart shows the number of medals won by a country at events in 2008 and 2012



- (a) Complete this statement about the medals won by the country in 2008
number of Silver medals = _____ × number of Gold medals

(1)

- (b) Show that the country won **more** medals in 2008 than in 2012

(2)

- (c) At the 2016 event the country won an **equal** number of each type of medal.
Here is a statement about the medals won by the country in 2016

The total number of medals **cannot** be 25

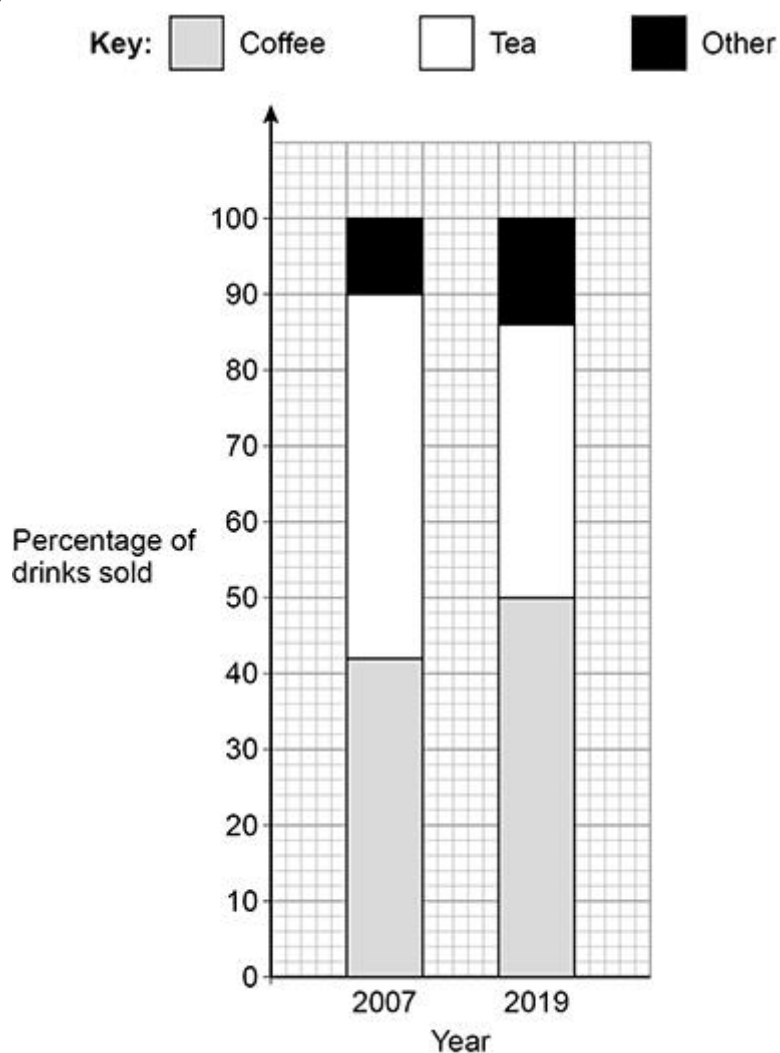
Give a reason why the statement is correct.

(1)

(Total 4 marks)

Q28.

The composite bar chart shows information about the **percentage** of drinks sold by a café in 2007 and 2019



- (a) In 2007 the café sold a total of 24 000 drinks.
How many **more** teas than coffees were sold?

Answer _____

(2)

- (b) Were more coffees sold at the café in 2019 than in 2007 ?
Tick a box.

☐

Yes

☐

No

☐

Cannot tell

Give a reason for your answer.

(1)

(Total 3 marks)