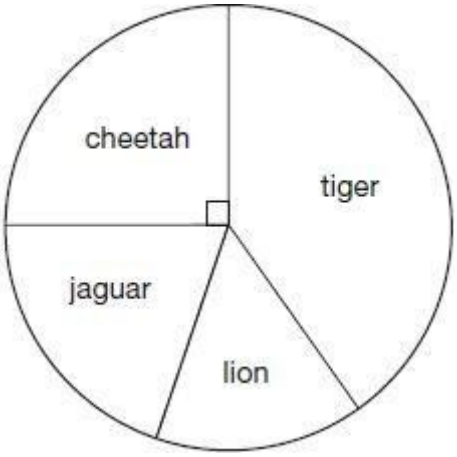
Session 1: Pie Charts

Q1.

This chart shows the number of different types of big cat in a zoo.

There are **20** big cats in the zoo altogether.



Here are some statements about the chart.

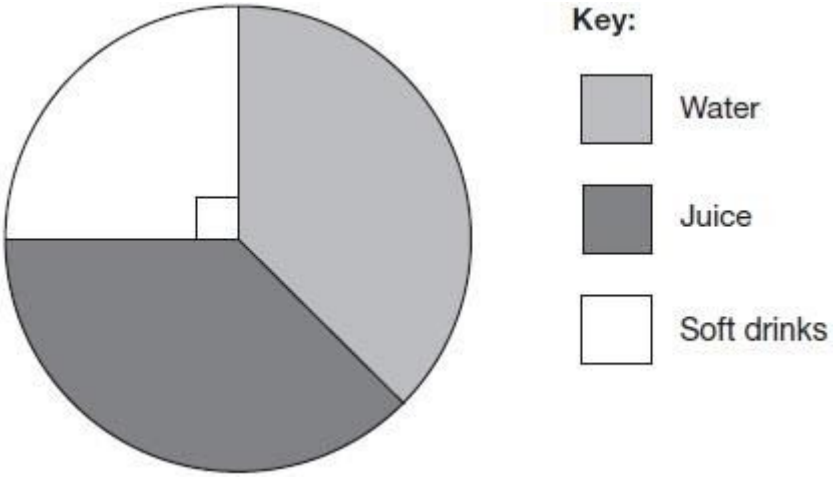
Tick the statements that are **true**.

There are more cheetahs than jaguars.	☐
The total number of lions and tigers is 10	☐
One-quarter of the big cats are cheetahs.	☐
There are more than 5 jaguars.	☐

2 marks

Q2. A shop sells drinks.

The pie chart compares the money a shop took last year for water, juice and soft drinks.



The shop took £8,264 for soft drinks.

Sales of water and juice were **equal**.

How much money did the shop take for **juice** last year?

Show your method

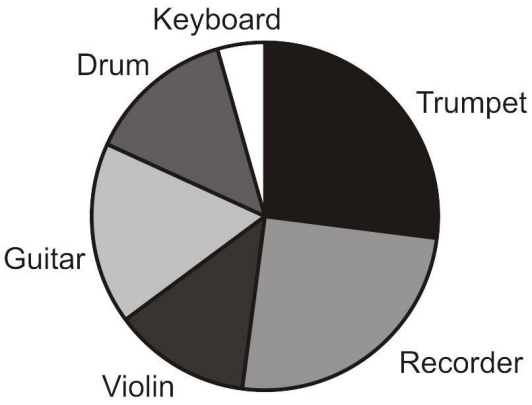
£

2 marks

Q3.

The Year 6 children in a school were asked to choose a musical instrument.

This is a pie chart of their choices.



Estimate what **fraction** of the children chose a **drum.**

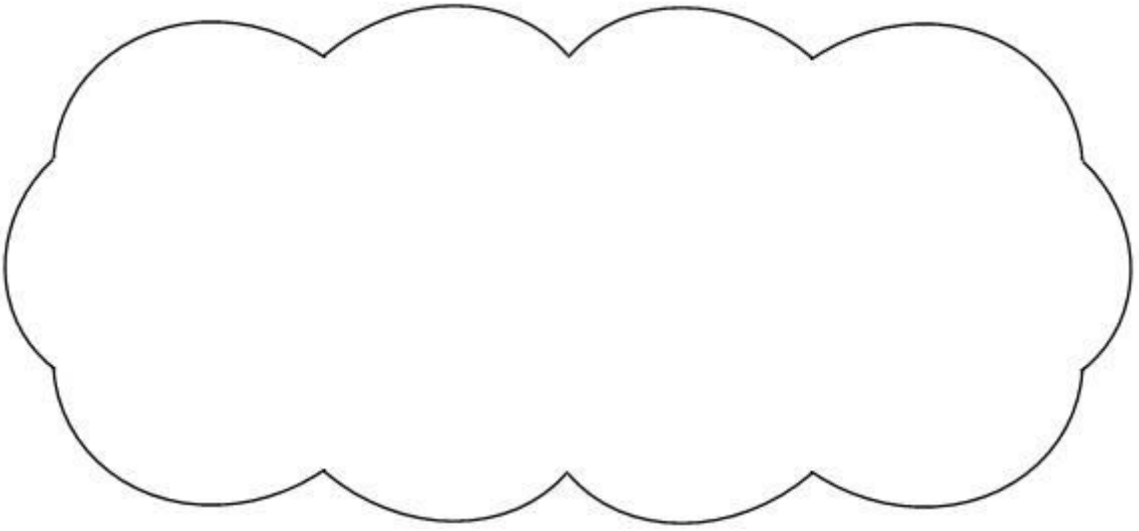
1 mark

There are **80** children in Year 6.

Estimate the number of children who chose a **violin**.

1 mark

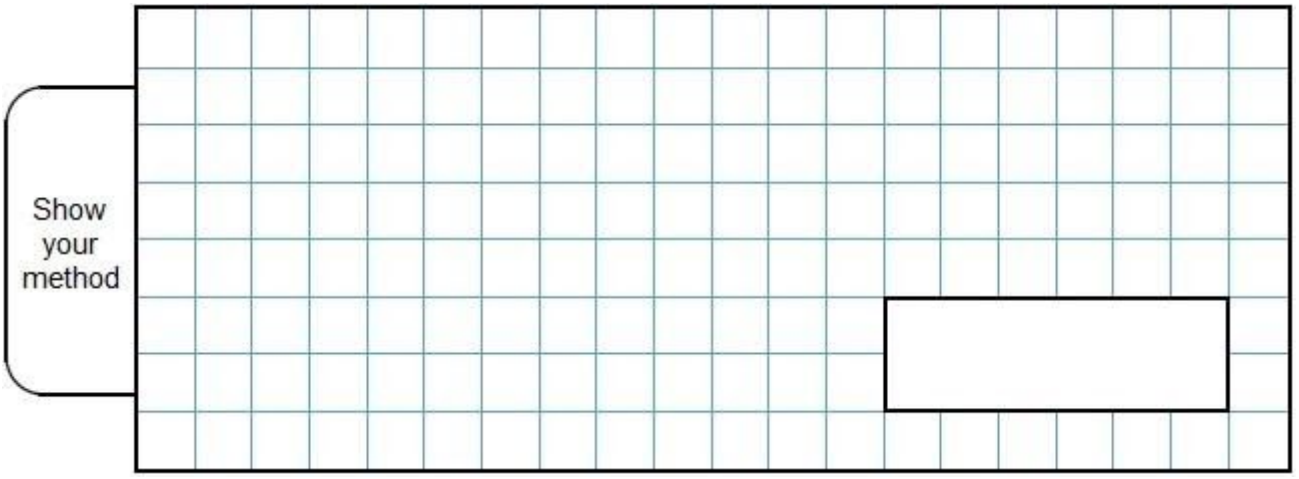
Explain how you decided.



1 mark

15% of the 80 children chose a **guitar.**

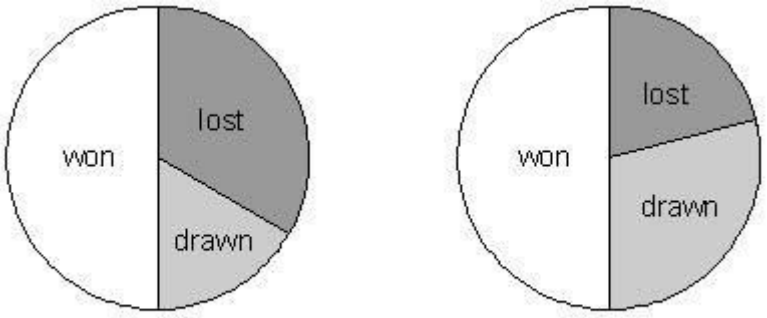
How many children is this?



2 marks

Q4.

The pie charts show the results of a school's netball and football matches.



The netball team played **30** games.

The football team played **24** games.

Estimate the percentage of games that the **netball team lost**.

%

1 mark

David says,

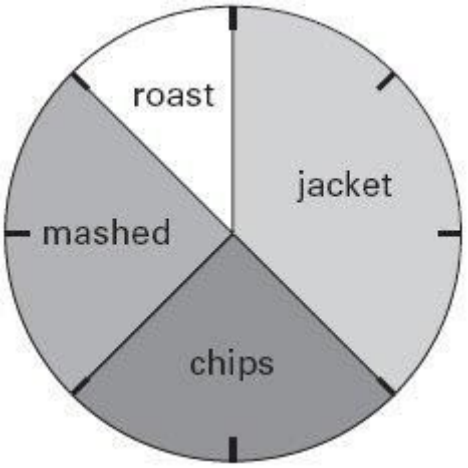
'The two teams won the same number of games'.

Is he correct?
Circle Yes or No.

Yes / No

Explain how you know. (1mark)

Q5. This pie chart shows how the children in Class 6 best like their potatoes cooked.



32 children took part in the survey.

Look at the four statements below.

For each statement put a tick (✔) if it is **correct**.
Put a cross (✘) if it is **not correct**.

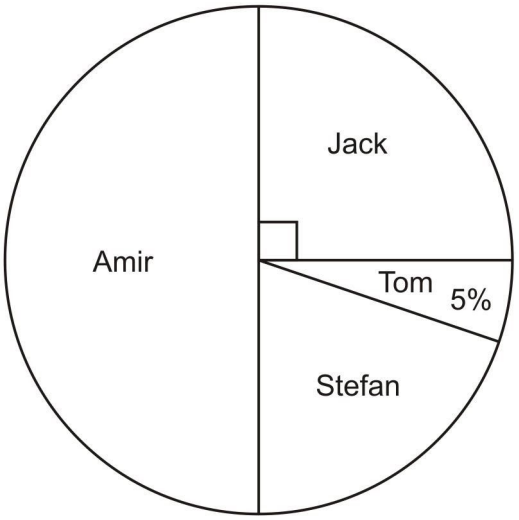
10 children like chips best.	☐
25% of the children like mashed potatoes best.	☐
$\frac{1}{5}$ of the children like roast potatoes best.	☐
12 children like jacket potatoes best.	☐

2 marks

Q6.

40 children predicted who would win the boys' race at sports day.

This pie chart shows their predictions.



What percentage of the children predicted that Stefan would win?

%

1 mark

10 children predicted the winner of the race **correctly**.

Who won the race?

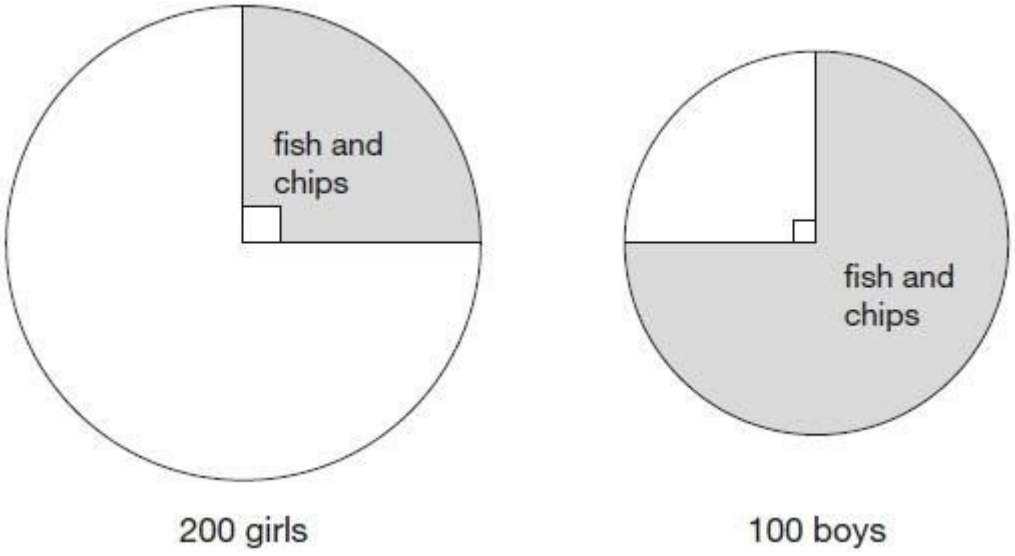
Explain how you know.

1 mark

Q7.

200 girls and 100 boys were asked about their favourite meal.

These pie charts show the results.



Look at the pie charts.

For each statement put a tick (✔) if it is true or a cross (✘) if it is false.

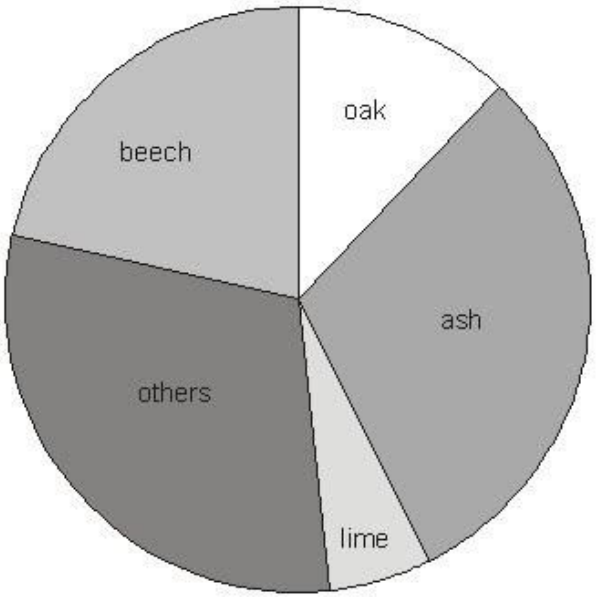
Three-quarters of the boys chose fish and chips.	
Three times as many boys as girls chose fish and chips.	
Altogether, half of the children chose fish and chips.	
25 more boys than girls chose fish and chips.	

2 marks

Q8.

Class 6 did a survey of the number of trees in a country park.

This pie chart shows their results.



Estimate the **fraction** of trees in the survey that are **oak** trees.

1 mark

The children counted 60 **ash** trees.

Use the pie chart to estimate the **number** of **beech** trees they counted.

1 mark
2 marks

Q1.

Award **TWO** marks for only two correct boxes ticked, as shown:

There are more cheetahs than jaguars.	✓
The total number of lions and tigers is 10	
One-quarter of the big cats are cheetahs.	✓
There are more than 5 jaguars.	

Award **ONE** mark for:

- only one correct box ticked and no incorrect boxes ticked

OR

- two correct boxes ticked and one incorrect box ticked.

Accept alternative unambiguous positive indications, e.g. Y.

Up to 2 marks

[2]

Q2.

Award **TWO** marks for the correct answer of £12396.

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg:

- £8264
  × 4
  £33056

OR

£33056
− 8264
£24792

£24792 ÷ 2

OR

- £8264 ÷ 2 = £4132
  £8264 + £4132

*Answer need not be obtained for the award of **ONE** mark*

Up to 2

[2]

Q3.

(a) The answer is approximately 1/7. Accept any fraction, percentage or decimal in the range:

- 1/9 to 1/5, inclusive
- 11% to 20%, inclusive
- 0.11 to 0.2, inclusive

1

(b) The correct answer is 10. Accept any number in the range 8 to 12, **inclusive.**

1

(c) The explanation should make reference, in some form, to appropriate fractional estimates, eg:

- "Because it looks like a quarter of a half and that's 10."
- "I thought the violin looked like half the trumpet and that was about a quarter."
- "I decided this because 1/4 was 20 children, so I halved 20 and made it 10."

Explanations which lack specific reference to appropriate fractions should not be awarded the mark, eg:

- *"Because it's a bit less than the trumpet."*
- *"Because there are 6 parts to the pie chart."*

1

(d) Award **TWO** marks for the correct answer of 12, even if there are errors in the working.

Award **ONE** mark if the answer is incorrect, but there is evidence of an attempt to calculate 15% of 80 by any method, eg:

- 15/100 × 80 = (incorrect answer given)
- 10% of 80 = 8, 5% is 4, so 15% of 80 = (incorrect answer given)
- 1% of 80 = 80/100 = 4/5, so 15% = 4/5 × 15 = (incorrect answer given)

*The writing of "15/100 × 80" (or equivalent) **alone** is **not** sufficient evidence of an attempt to calculate.*

Up to 2

[5]

Q4.

(a) Answer in the range 30% to 36% inclusive.

1

(b) An explanation which recognises that both teams won half their games, but both teams played a different number of games, eg

- Half of 30 is not the same as half of 24
- Because of 30 e 15 but of 24 = 12
- Because 15 is more than 12

No mark is awarded for circling 'No' alone.

Do not *accept vague or arbitrary explanation, eg*

- *The netball team played more games;*
- *Both teams won half their games;*
- *30 is more than 24*

If 'Yes' is circled but a correct unambiguous explanation is given, then award the mark.

U1

[2]

Q5.

Award **TWO** marks for boxes ticked and crossed as shown:

If the answer is incorrect, award **ONE** mark for any three boxes correctly completed.

*Accept alternative unambiguous indications such as **Y** or **N**.*

*For **TWO** marks, accept:*

Up to 2

[2]

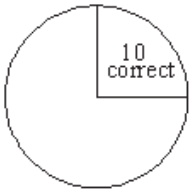
Q6.

(a) 20%

Do not *accept equivalent fractions or decimals.*

1

(b) An explanation which recognises that 25% chose Jack, eg:

- 'A quarter of the children guessed Jack and that is 10 out of 40'
- '10 out of 40 ($\frac{1}{4}$) were correct and the pie chart shows $\frac{1}{4}$ chose Jack'
- 'Half guessed Amir which is 20 and Jack is half of that which is 10'
- '10 guessed right and the pie chart shows three times as many chose the other runners'
- '25% chose Jack and 25% were correct'
- 

No mark is awarded for 'Jack' alone.

Do not *accept vague or incomplete explanations, eg:*

- *'There were 40 children altogether'*
- *'Less than half chose Jack'*
- *'Because Jack is the fastest'.*

If the answer to 'Who won the race?' is incorrect, but a correct, unambiguous explanation is given, then award the mark.

U1

[2]

Q7. Indicates all four correctly, ie:

! Incomplete response

For 2 marks, do not accept any box left blank

! Other indication

Accept any unambiguous indication, eg:

- *'Y' for ticked*

2

or

Indicates any three correctly

1

[2]