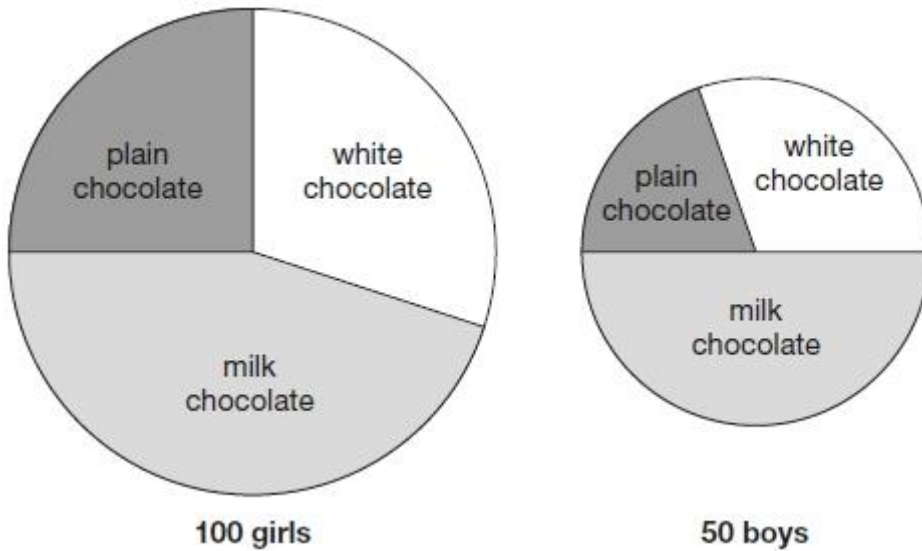**Q1.**

100 girls and 50 boys were asked which kind of chocolate they like best.

These two pie charts show the results.

100 girls   50 boys

Dev says:

"The pie charts show that more girls than boys liked milk chocolate best."

Dev is correct.

Explain how you know.

1 mark

Q2.
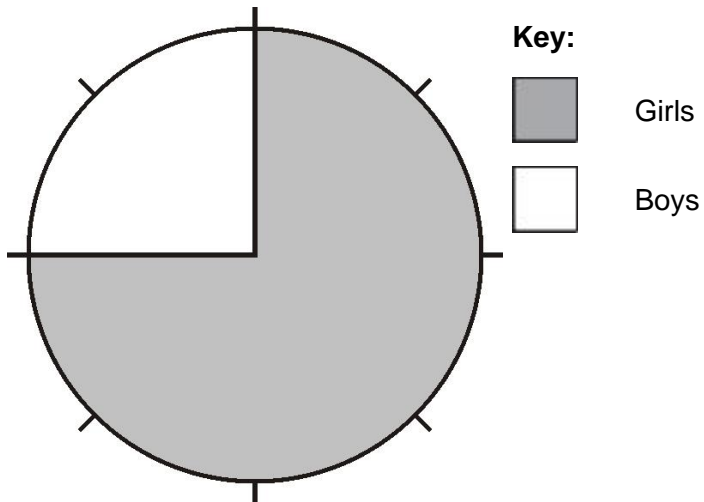
Look at the information in these two pie charts.

Pupils in class 6K

Key:

◻ (grey) Girls

◻ (white) Boys

Girls in class 6K

Key:

◻ (grey) 11 years old

◻ (white) Not 11 years old
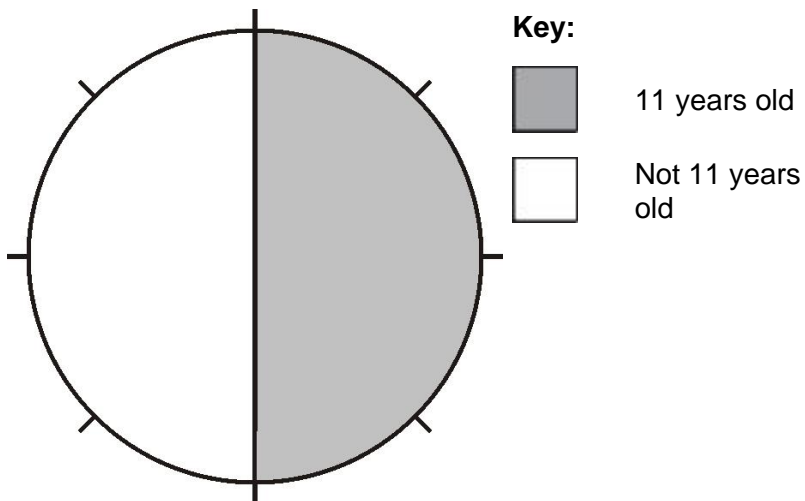
Use the information in the two pie charts to complete the pie chart below.

Pupils in class 6K
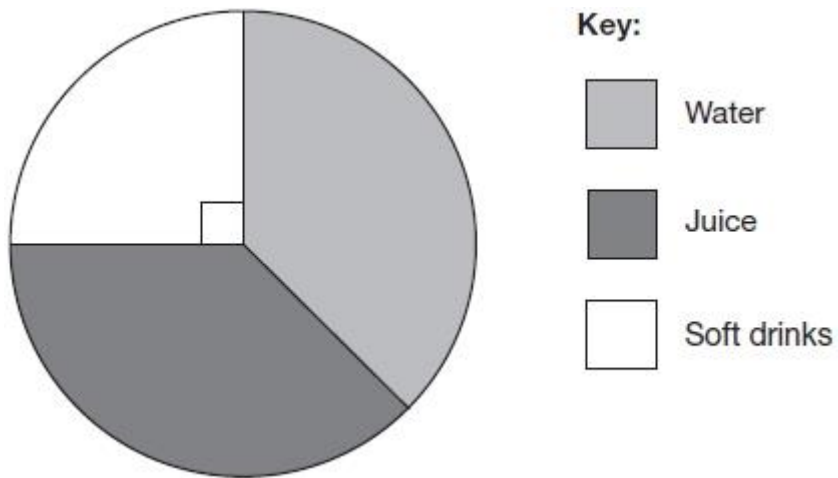
Key:

◻ (grey) 11 years old girls

◻ (white) All other pupils in the class
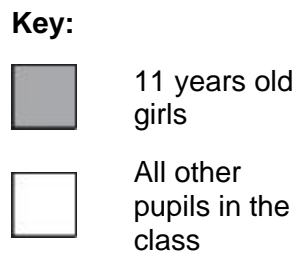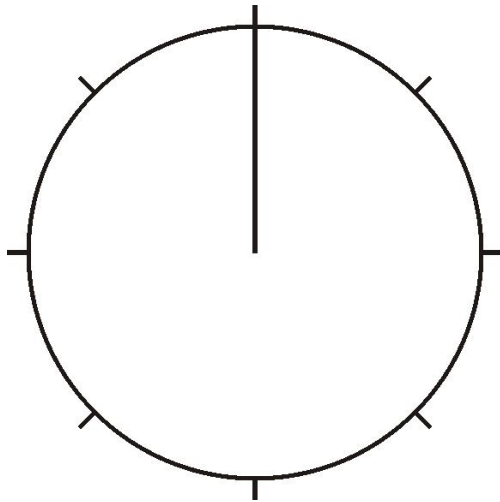
Q3.

A shop sells drinks.

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

Key:

Water

Juice

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?

£

2 marks

Q4.

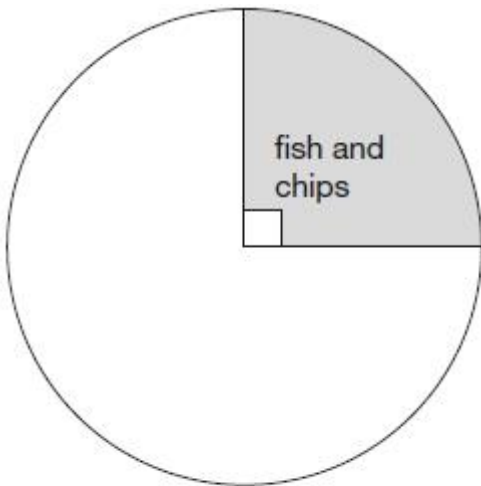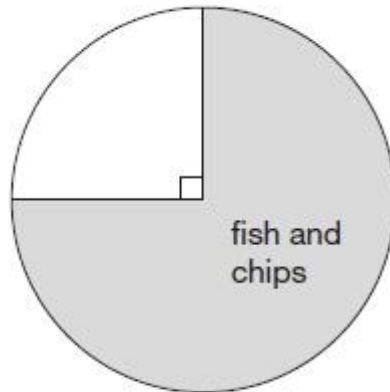200 girls and 100 boys were asked about their favourite meal.

These pie charts show the results.

fish and chips

fish and chips

200 girls

100 boys

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. ☐

Q5.

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

This pie chart shows their predictions.
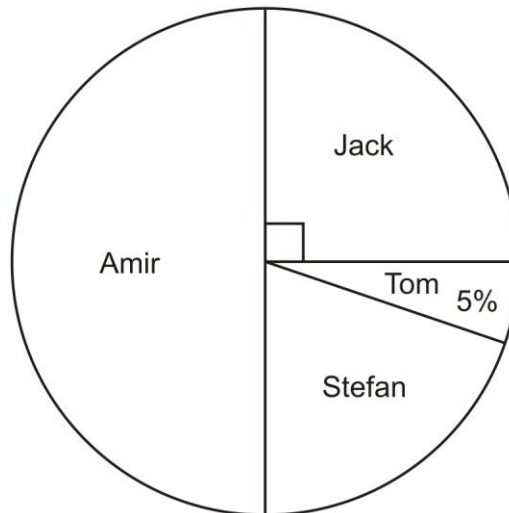
What percentage of the children predicted that Stefan would win?

☐ %

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

Who won the race?

☐

Explain how you know.

Q6.

A shop sells books, CDs and DVDs.

This pie chart shows the sales of each in one week.
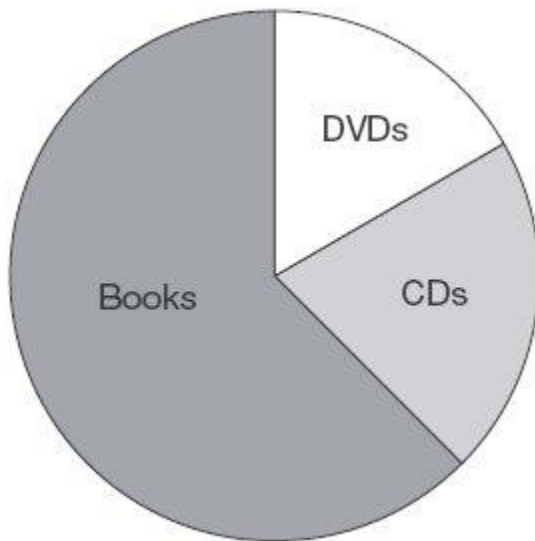
Estimate the **fraction** of the total sales that were DVDs.

1 mark

In this week, 200 **CDs** were sold.

Estimate how many books were sold.

Q7.

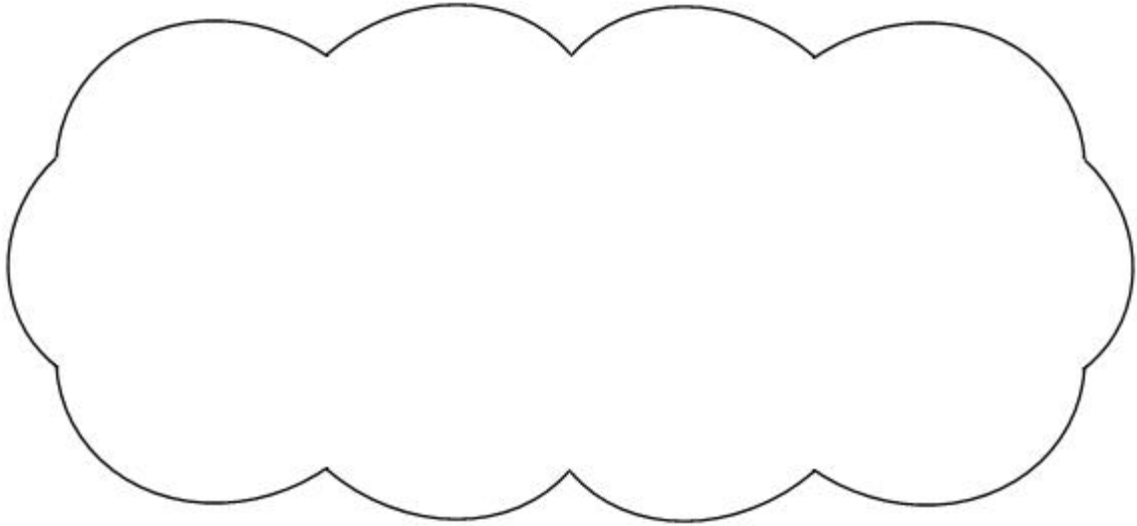This pie chart shows how the children in Class 6 best like their potatoes cooked.
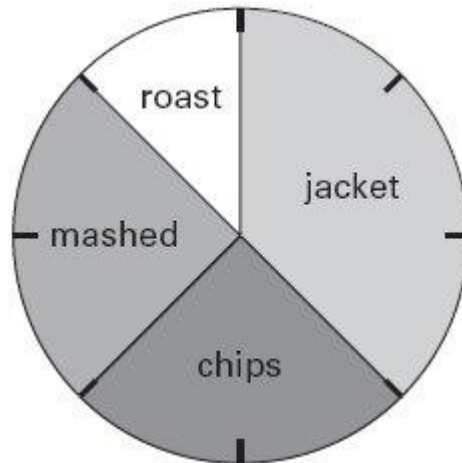
32 children took part in the survey.

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

Q8.

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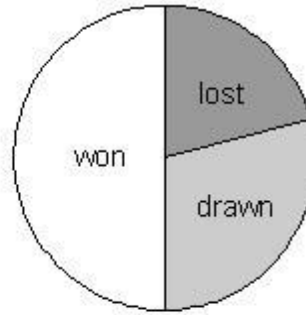
Netball   Football

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.

1 mark

Q9.

This pie chart shows the lunch choices of year 6 children at a school.

28 children in year 6 have a **school meal**.

How many **go home** for lunch?

Show your method	

2 marks

Q10.

Sarah makes a pie chart to show the proportion of boys and girls in her class.

Number in class	Size of angle on pie chart

Boys	14	144°
Girls	21	216°

The next day another **boy** joins Sarah's class.

She makes a new pie chart.
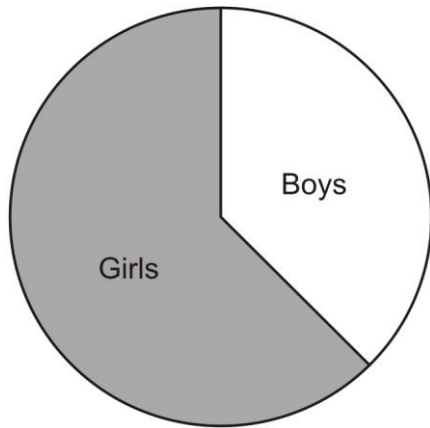
Calculate the angle for **boys** on the new pie chart.

Show your method

°

2 marks
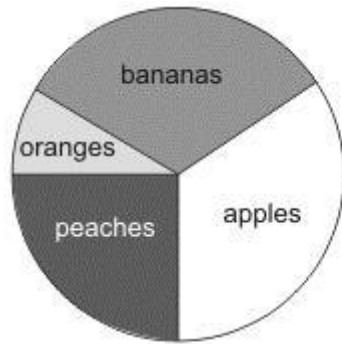
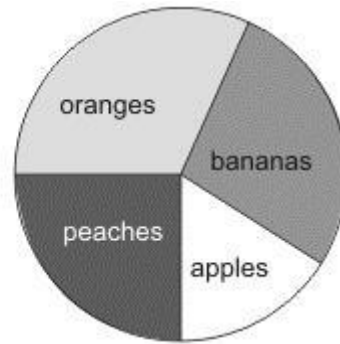## Q11.

Some children work out how much money two shopkeepers get from selling fruit.

They use pie charts to show this.

Mrs Binns

Mr Adams

Mrs Binns gets **£350** selling **bananas.**

Estimate how much she gets selling **oranges.**

£

Mrs Binns gets a total of £1000 and Mr Adams gets a total of £800

Estimate how much **more** Mrs Binns gets than Mr Adams for selling **peaches**.

£

Mark schemes

Q1.

Award **ONE** mark for an explanation which recognises that the
two pie charts represent different numbers of children, e.g:

*   '25 boys like milk chocolate best and more than 25 girls do'

*   'It's almost half of 100 girls and that's more than half of 50 boys'

*   'The pie chart shows that half of the boys chose milk chocolate and that's 25. About 45 girls chose milk chocolate because it's nearly half of the girls' pie chart'

*   '25 boys chose milk chocolate, but (whole number in the range 40-49) girls chose milk chocolate'

*   'There are twice as many girls as boys so a quarter of the girls' pie chart is the same number as half of the boys' pie chart, and it's more than a quarter of the girls'

* $\frac{1}{2}$ of 50 boys chose milk = 25

    $\frac{1}{4}$ of 100 girls chose plain = 25

    and from the girls' pie chart it is obvious that more chose milk than plain'

*   'There are twice as many girls as boys and the sizes of the pie charts show this and the area for boys who like milk chocolate is smaller than the area for girls who like it'.

    Do not accept vague or incomplete explanations, e.g:
    *   *'100 is more than 50'*
    *   *'More girls took part than boys so more girls like milk chocolate'*
    *   *'The section for boys who like milk chocolate is smaller than the section for girls who like it'.*

Commentary: The pie charts are presented using the mathematical convention that their areas are proportional to the numbers they represent, i.e. in this example the chart for girls has twice the area of the chart for boys.

[1]

Q2.

Divides the pie chart into two correct sectors and shades/labels correctly, eg

*
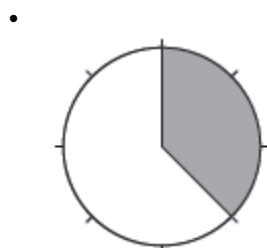
Accept unambiguous indication of shading/labelling, eg
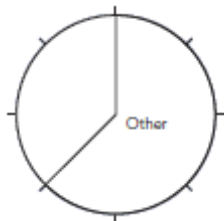
•

! Given key ignored

Condone incorrect shading provided their labelling is unambiguous

eg, accept

•

! Additional sectors shown

Ignore provided the sector(s) for 11 year-old girls are clearly indicated

eg, accept

•
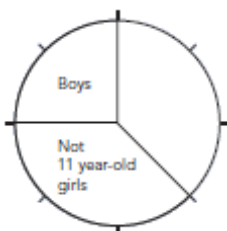
[1]

Q3.

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

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

■
$$\begin{array}{r} £8264 \\ \times \quad 4 \\ \hline £33056 \end{array}$$

OR

$$\begin{array}{r} £33056 \\ - \quad 8264 \\ \hline £24792 \end{array}$$

£24792 ÷ 2

OR

- £8264 ÷ 2 = £4132
  £8264 + £4132

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

Up to 2

[2]

Q4.

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]

Q5.

(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'

-
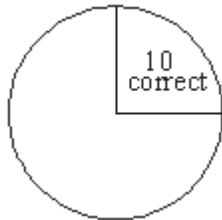
No mark is awarded for 'Jack' alone.

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]

Q6.

(a)   Answer in the range $\dfrac{13}{100}$ to $\dfrac{1}{5}$ inclusive

Range includes $\dfrac{1}{6}$ *and* $\dfrac{1}{7}$

Accept decimals or percentages.
(0.13 to 0.2 inclusive)
(13% to 20 % inclusive)

1

(b)   Answer in the range 500 to 800 inclusive

1

[2]

Q7.

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]

Q8.

(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]

Q9.

Award **TWO** marks for the correct answer of 20

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

28 = 35% of year 6
4 = 5%, so 25% is 4 × 5
    Calculation need not be completed for the award of the mark.

Up to 2

[2]

Q10.

Award **TWO** marks for the correct answer of 150°

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

360 ÷ 36 = 10

15 × 10

Calculation need not be completed for the award of the mark.

Up to 2

[2]

Q11.

(a)   Award **ONE** mark for an answer in the range £85 to £125, **inclusive**.

1

(b)   Award **ONE** mark for the correct answer of £50
Accept any estimate in the range £45 to £55, **inclusive.**

1

[2]