Q1.

Seb goes on a sponsored walk to collect money for charity.

His aunt promises to pay 75p for each kilometre he walks.

She pays him £6.75 at the end of the walk.

How many kilometres does Seb walk?

km

1 mark

15% of the people walk 5 km or less.

40% of the people walk 8 km or more.

What percentage of the people walk between 5 km and 8 km?

%

1 mark

Q2.

Write the missing number.

1 mark

Q3.

Write in the missing numbers.

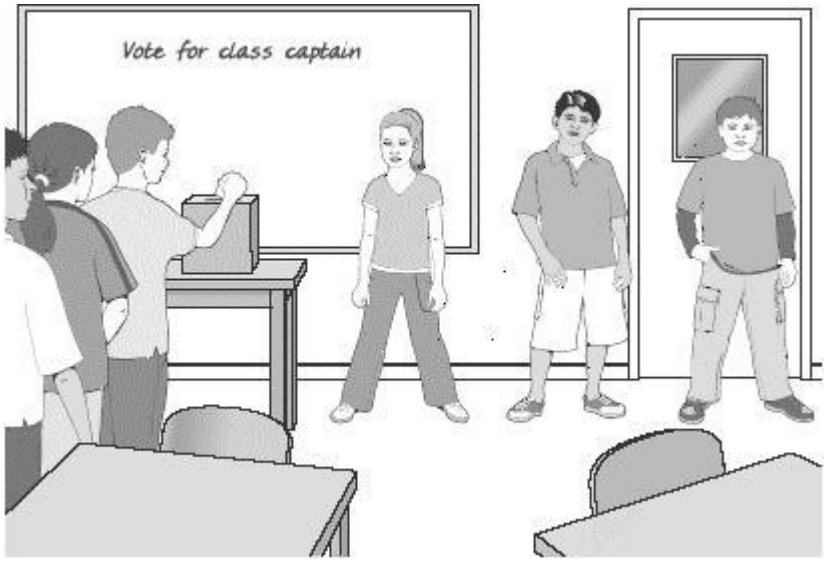
30% of 60 is ☐

1 mark

30% of ☐ is 60

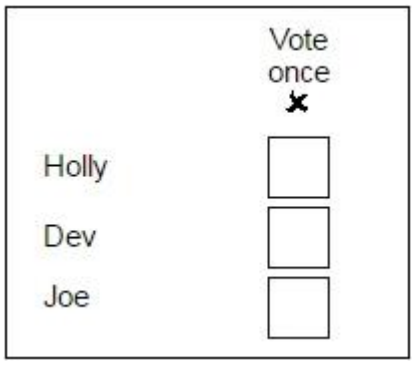
1 mark

Q4.



All the children in Class 6 vote to pick a class captain.

The choice is Holly or Dev or Joe.



Dev gets 10% of the votes.

Joe gets twice as many votes as Holly.

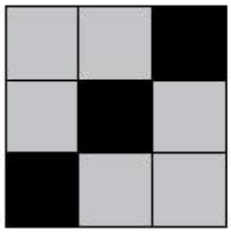
What percentage of the votes does the winner get?

%

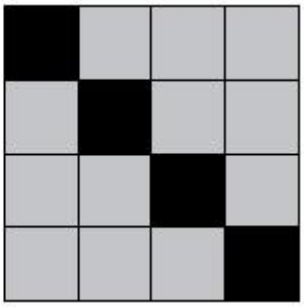
1 mark

Q5.

These patterns are drawn on square grids.



Pattern A



Pattern B

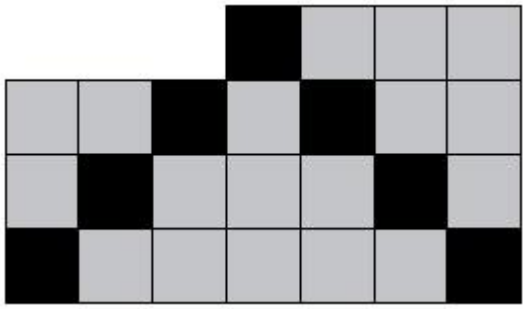
In pattern A, the **ratio** of black squares to grey squares is **1 : 2**

What is the ratio of black squares to grey squares in pattern B?

1 :

1 mark

Now look at this new pattern.



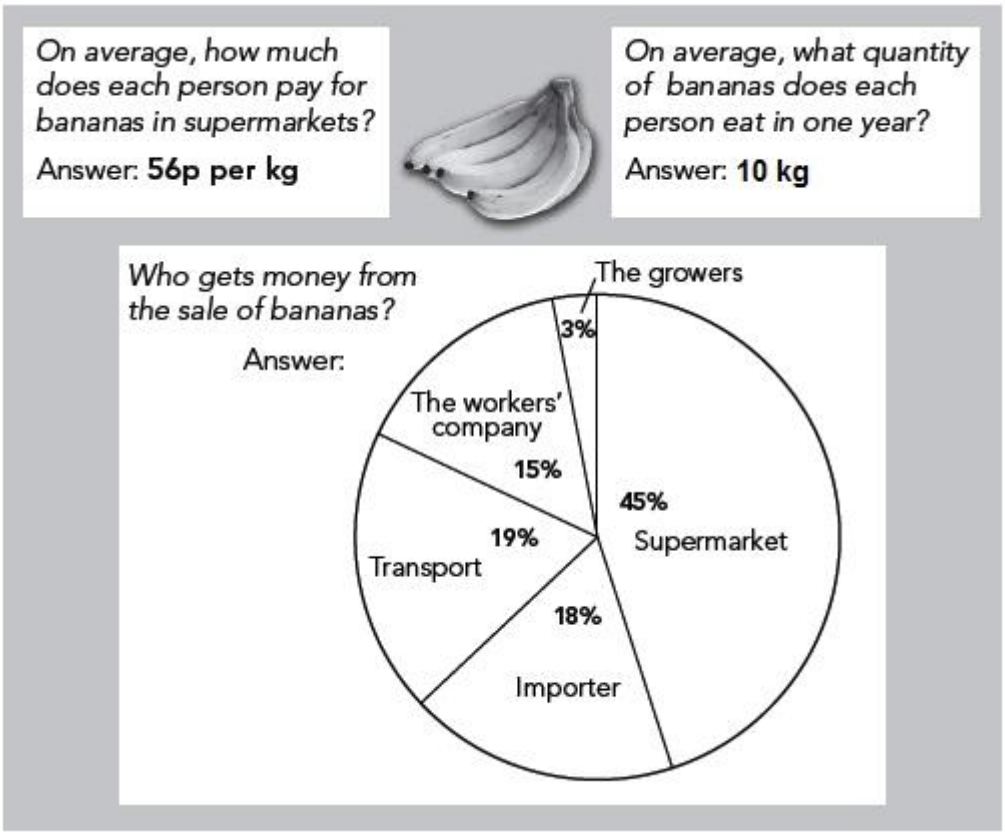
What **percentage** of the new pattern is **black**?

%

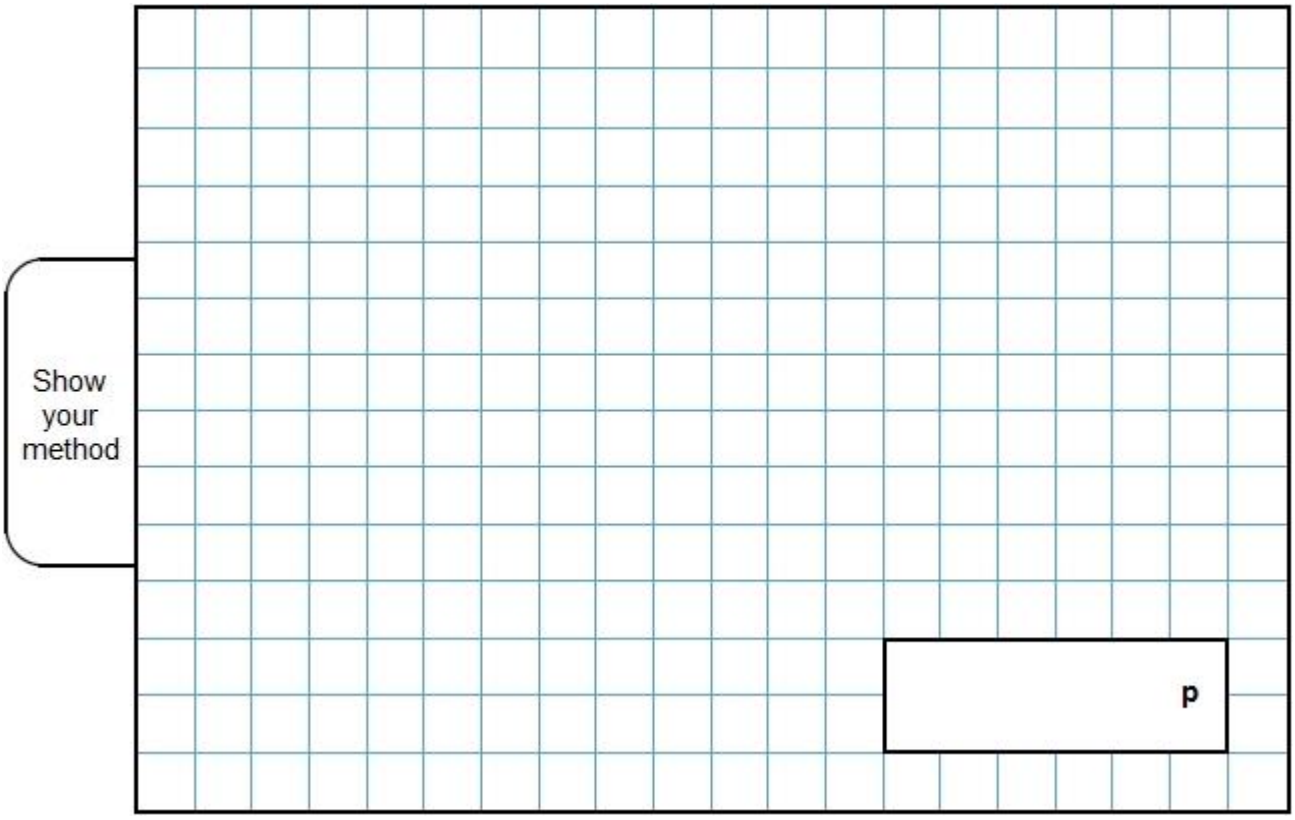
1 mark

Q6.

Here are three questions and answers about bananas.



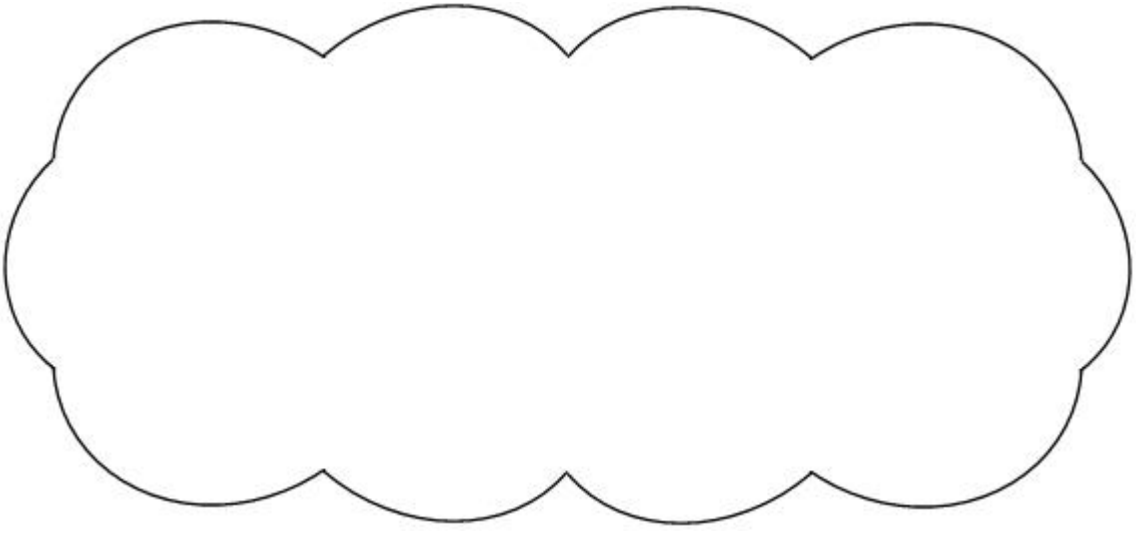
How much of the money each person pays for bananas in one year goes to the **growers**?



2 marks

Q7.

If you know **40%** of a number, explain how you could work out the original number.

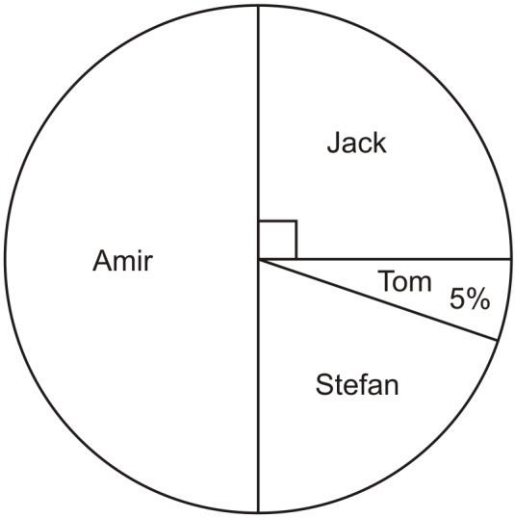


1 mark

Q8.

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**.

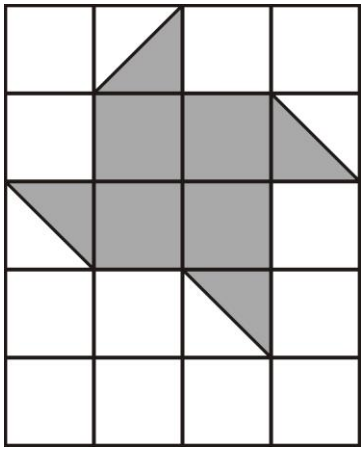
Who won the race?

Explain how you know.

1 mark

Q9.

Here is a grid of 20 squares.



What percentage of the grid is shaded?

%

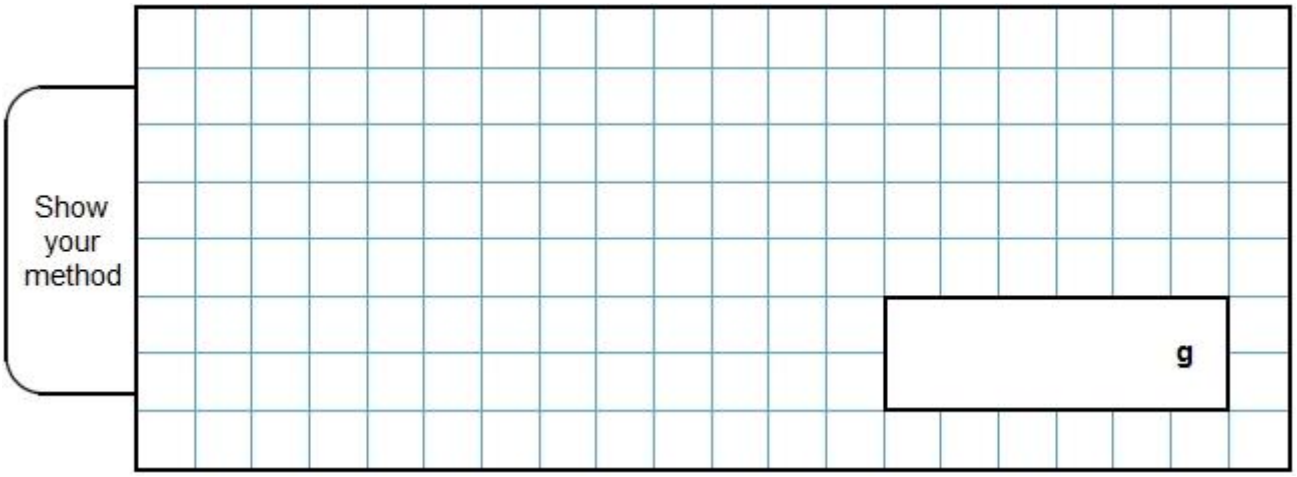
1 mark

Q10.

Emily makes 250 grams of a snack mixture.

15% of the weight is raisins, 25% is banana chips and the rest is peanuts.

How many grams of **peanuts** does she use?



2 marks

Q11.

Hassan scores 40 out of 80 in a test.

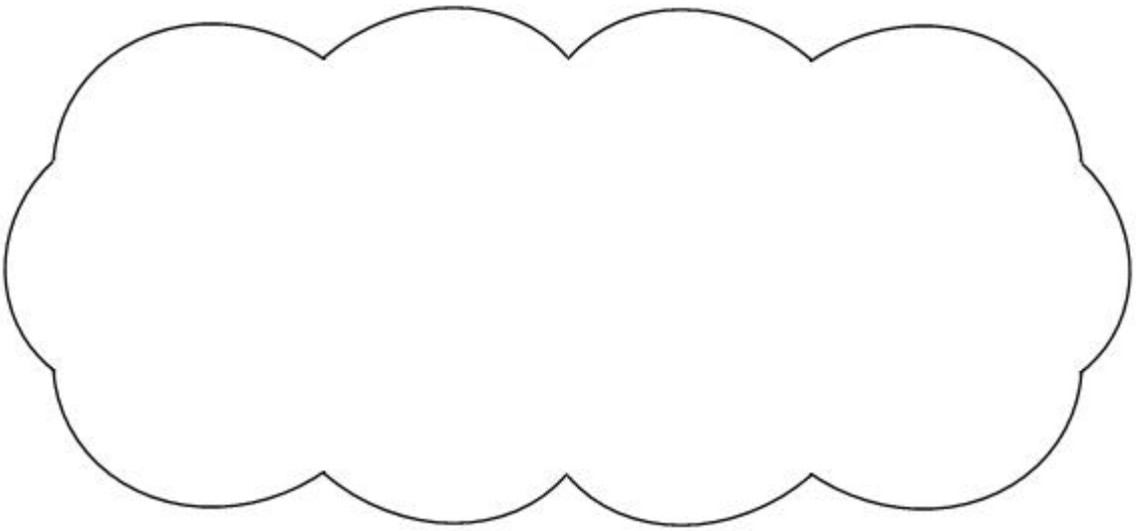
Kate scores 40% in the same test.

Who has the higher score?

Circle **Hassan** or **Kate**.

Hassan / Kate

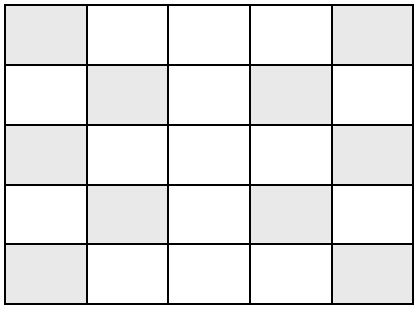
Explain how you know.



1 mark

Q12.

Here is a pattern on a grid.



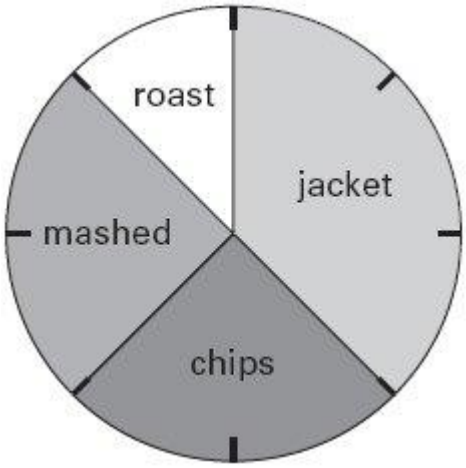
What **percentage** of the grid is shaded?

%

1 mark

Q13.

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

Q14.

Circle the **two** fractions that are equivalent to **0.6**

$\frac{6}{10}$ $\frac{1}{60}$ $\frac{60}{100}$ $\frac{1}{6}$

1 mark

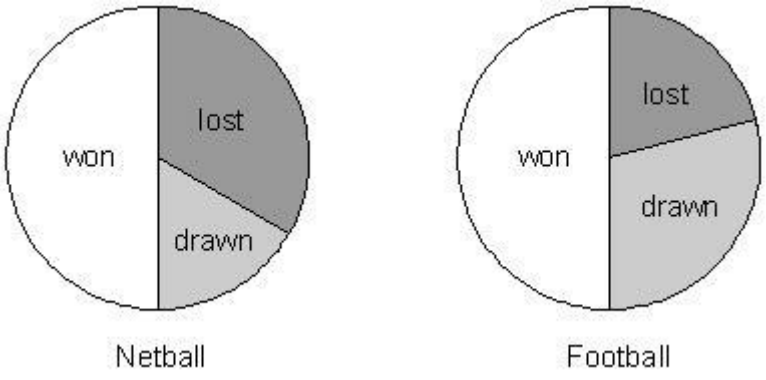
Q15.

Calculate **5%** of **£3600**

1 mark

Q16.

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.

1 mark

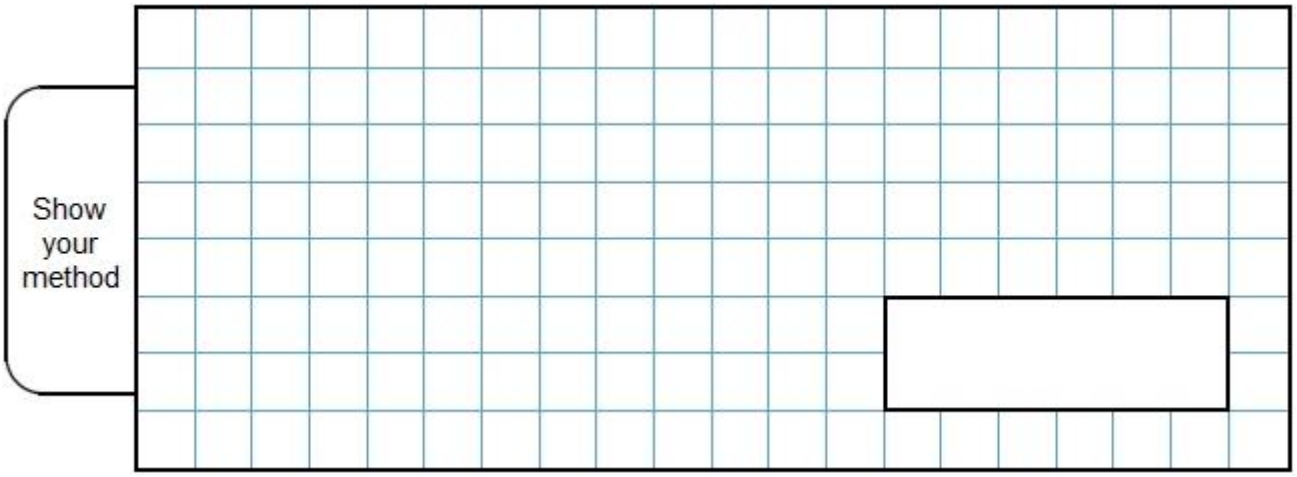
Q17.

250 000 people visited a theme park in one year.

15% of the people visited in April and

40% of the people visited in August.

How many people visited the park in the rest of the year?



2 marks

Mark schemes

Q1.

(a) 9

1

(b) 45%

1

[2]

Q2.

25 %

Do not accept *equivalent fractions or decimals*

[1]

Q3.

(a) 18

Do not *accept 18%*

1

(b) 200

Do not *accept 200%*

If the answer for part (a) is 18% ***AND*** *the answer for (b) is 200%, award*
ONE *mark only in the part (b) box.*

1

[2]

Q4.

60%

U1

[1]

Q5.

1 : 3

1

28%

Do not accept *equivalent fractions or decimals*

1

[2]

Q6.

16.8p or 17p or equivalent

2

or

Shows the digits 168 or 17

or

Shows a complete correct method with not more than one computational or rounding error
eg

- 56 × 10 × 3 ÷ 100
- 5.6(0) × 0.03
- 560 ÷ 100 = 5.6

6p *(premature rounding)* × 3 = 18

! Money
See general guidance

1

[2]

Q7.

An explanation which recognises that 40% of the number must be multiplied by $2\frac{1}{2}$, or equivalent, eg:

- 'You multiply by 2.5'
- 'Halve it and multiply by 5'
- 'Divide by 4 to get 10% and then multiply by 10'
- 'Divide by 40 then multiply by 100'
- 'If you had 100, quarter of 100 is 25, then times by 10 to get 250'
- 'Double it and add half of it'.

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

- *'Start with the original number and find 40% of it'*

- *'Find 10% and multiply by 10'*
- *'Divide by 4 to find 10% and then you can find 100%'*
- *'Find 1% and multiply by 100'*
- *'If you had 20 it would be 50'*
- *'Add 60%'*

U1

[1]

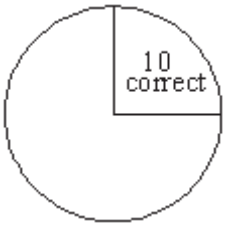
Q8.

(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]

Q9.

30%

***Do not** accept equivalent fractions or decimals.*

[1]

Q10.

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

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

- 15 + 25 = 40
  100 – 40 = 60
  10% of 250 = 25
  25 × 6 = wrong answer

OR

- 100% – 40% = 60%
  60% of 250 = wrong answer

OR

- 15% of 250 = $37\frac{1}{2}$
  25% of 250 = $62\frac{1}{2}$
  250 – $37\frac{1}{2}$ – $62\frac{1}{2}$ = wrong answer

*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2

[2]

Q11.

An explanation which correctly compares two percentages or two scores, eg:

- '40 out of 80 is 50%'
- '50% is more than 40%'
- '40% of 80 is 32'
- '40 out of 80 is better than 40 out of 100'
- '40 out of 80 is more than 32 out of 80'
- 'Kate has less than half marks'.

No mark is awarded for circling 'Hassan' alone.

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

- *'Hassan has half marks'*
- *'Percentages are bigger'*
- *'Hassan has more than 40%'*
- *'Kate has less than 40 out of 80'.*

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

U1

[1]

Q12.

40%

Do not *accept equivalent fractions or decimals.*

[1]

Q13.

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]

Q14.

Two fractions circled as shown:

$\frac{6}{10}$ $\frac{1}{60}$ $\frac{60}{100}$ $\frac{1}{6}$

Both *fractions must be indicated for the award of the mark.*

Accept any other clear way of indicating the correct fractions, such as ticking or underlining.

[1]

Q15.

£180

***Do not** accept 180%*

[1]

Q16.

(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]

Q17.

Award **TWO** marks for the correct answer of 112 500

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

- 45% of 250 000

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

Up to 2

[2]

Q18.

(a) Answer in the range 12:30pm to 1:00pm exclusive.

Accept answers with or without 'pm'.

1

(b) Award **TWO** marks for the correct answer of $26\frac{2}{3}$ % **OR** 26.6%

*Accept 26.6% **OR** 26.7% **OR** 26.6 ... % **OR** 27%*

*Accept for **ONE** mark 26%*

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

40 ÷ 150 × 100

Answer need not be obtained for the award of the mark.

Up to 2

[3]