

Q1.

Write the missing number.



Original price £60

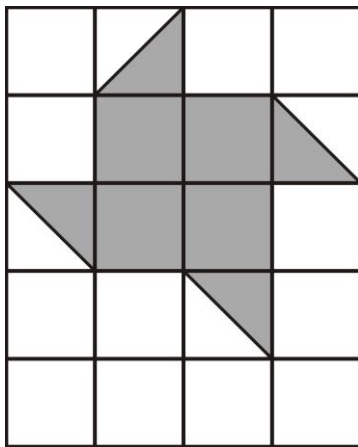
Reduced by %

Now only £45

1 mark

Q2.

Here is a grid of 20 squares.

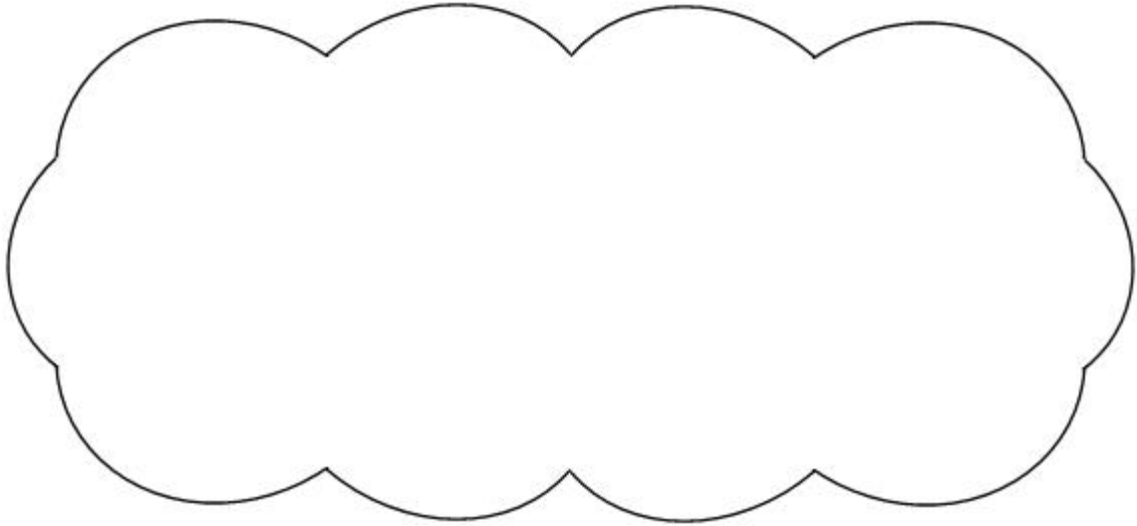


What percentage of the grid is shaded?

1 mark

Q3.

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



1 mark

Q4.

Calculate 55% of 640

1 mark

Q5.

Write these in order of size, starting with the smallest.

$$\frac{3}{4}$$

0.34

0.7

43%

smallest

1 mark

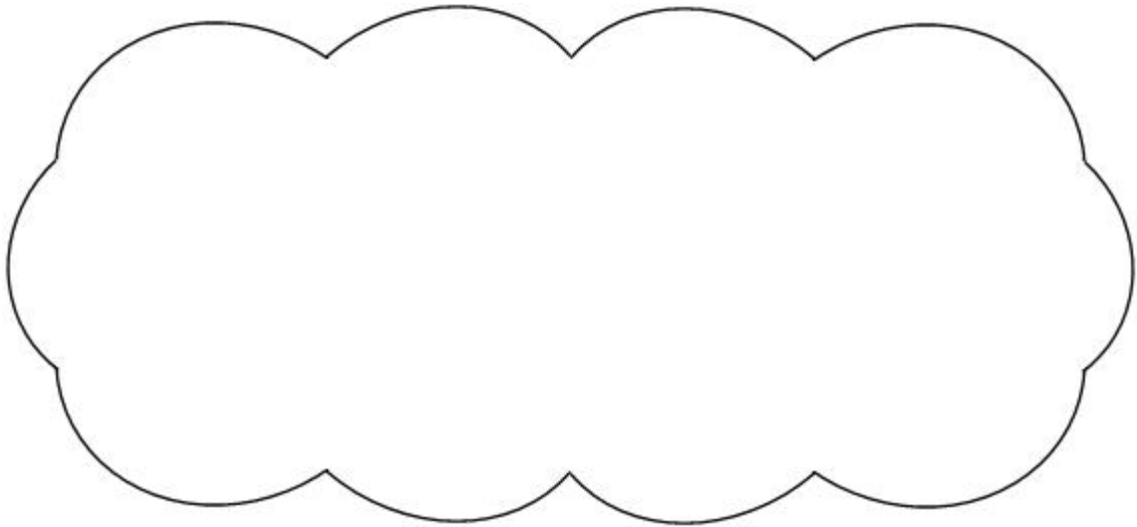
Q6.

Liam did a survey of 55 people to see how many were left-handed.

Liam says,

'The results show that exactly 10% of the people in the survey are left-handed.'

Explain why Liam cannot be correct.



1 mark

Q7.

A cat sleeps for **12 hours** each day.
50% of its life is spent asleep.



Write the missing percentage.

A koala sleeps for **18 hours** each day.

%

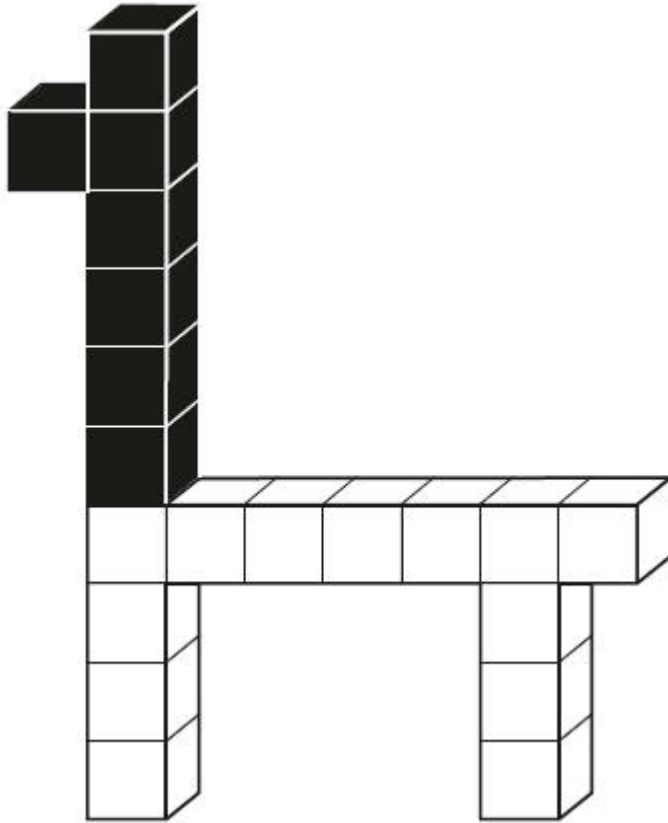
of its life is spent asleep.



1 mark

Q8.

This model is made with 20 cubes.



What **percentage** of the cubes in the model is black?

 %

1 mark

Q9.

Amina asked 60 children to choose their favourite flavour of jelly.

These were her results.

Flavour	Number of children
Raspberry	12
Lemon	8
Orange	15
Blackcurrant	25
Total	60

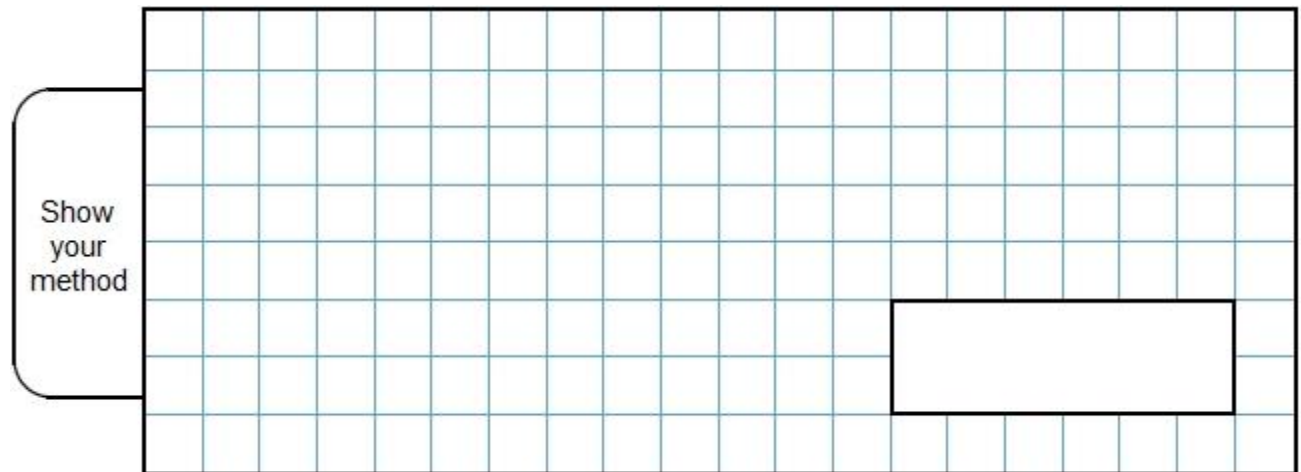
What **percentage** of the 60 children chose orange?

 %

20% of Megan's number is 64

What is 50% of Megan's number?

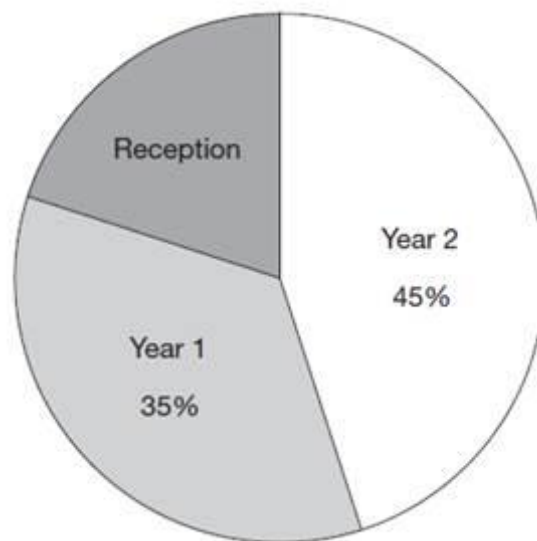
Show your method



2 marks

Q13.

The pie chart shows the Year groups of children at Woodland Infant School.



There are 56 children in Year 1.

How many children are there in Reception?

Show your method

children

2 marks

Q14.

20% of the children in a sports club play tennis.



25% of the children who play tennis **also** play rounders.



There are 8 children in the club who play **both** tennis and rounders.

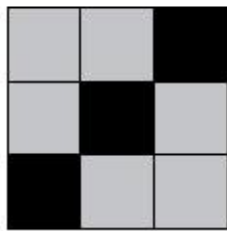
How many children are there in the sports club **altogether**?

Show your method

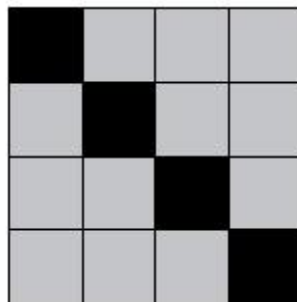
2 marks

Q15.

These patterns are drawn on square grids.



Pattern A



Pattern B

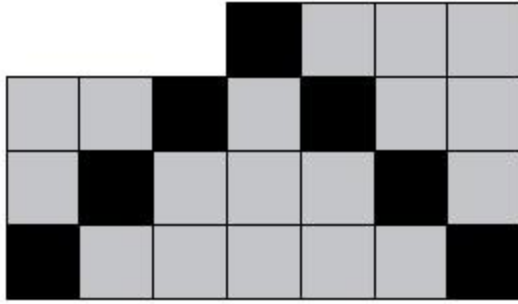
In pattern A, the **ratio** of black squares to grey squares is **1 : 2**

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

1	:	
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1 mark

Now look at this new pattern.



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

%

1 mark

Mark schemes

Q1.

25 %

Do not accept equivalent fractions or decimals

[1]

Q2.

30%

Do not accept equivalent fractions or decimals.

[1]

Q3.

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]

Q4.

352

Do not accept 352%

[1]

Q5.

Numbers in order as shown:

0.34

43%

0.7

$\frac{3}{4}$

Accept use of equivalent fractions, decimals or percentages, eg 0.34, 0.43, 0.7, 0.75

[1]

Q6.

An explanation which recognises that 10% of 55 is not a whole number, eg:

- '10% of 55 is $5\frac{1}{2}$, and you can't have $5\frac{1}{2}$ people'
- 'It wouldn't be a whole number of people'
- 'No whole number out of 55 will give you 10%'
- 'If it was 5 people, 5 out of 55 isn't 10%.
6 out of 55 isn't 10% either'
- 'Because you can't have half a person.'
- $5\frac{1}{2}$,

Do not accept vague or incomplete explanations, eg:

- 'You can't get 10% of 55'
- 'Some children write with both hands'.

U1

[1]

Q7.

75

[1]

Q8.

35%

[1]

Q9.

25

[1]

Q10.

£140

Do not accept 140%

Q11.

Award **TWO** marks for a correct answer of 30

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

- 10% of 200 = 20
- 25% of 200 = 50
- $50 - 20 =$ wrong answer

OR

- $25\% - 10\% = 15\%$
 - 15% of 200 = wrong answer
- Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2m

[2]

Q12.

Award **TWO** marks for the correct answer of 160

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

- $64 \div 2 = 32$
- $64 + 64 + 32 =$ wrong answer

OR

- $64 \times 5 = 320$
 - $320 \div 2 =$ wrong answer
- Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2
U1

[2]

Q13.

32

2

or

160 seen (*the total children in the school*)
Do not accept 160° or 160%

OR

Shows or implies a complete, correct method, eg:

- $35 + 45 = 90$ (*error*)
 $100 - 90 = 10$
 $56 \div 35 = 1.6$
 $1.6 \times 10 = 16$
- 35% of children = 56
total children = $56 \times 100 \div 35 = 150$ (*error*)
Reception = $100 - (45 + 35)\% = 20\%$
Reception = 20% of 150
 $0.2 \times 150 = 40$ (*error*)
- 35% is 56
5% is 8
20% is $4 \times 8 = 24$ (*error*)

1

[2]

Q14.

160

2

or

32 seen (*number who play tennis*)

Do not accept 32% seen

OR

Shows or implies a complete correct method, eg:

- $8 \times 4 \times 5$
- 25% of tennis is 8
 $8 \times 4 = 24$ (*error*)
tennis is 20% of sports club
 $24 \times 5 = 120$

1

[2]

Q15.

1 : 3

1

28%

Do not accept equivalent fractions or decimals

1

[2]