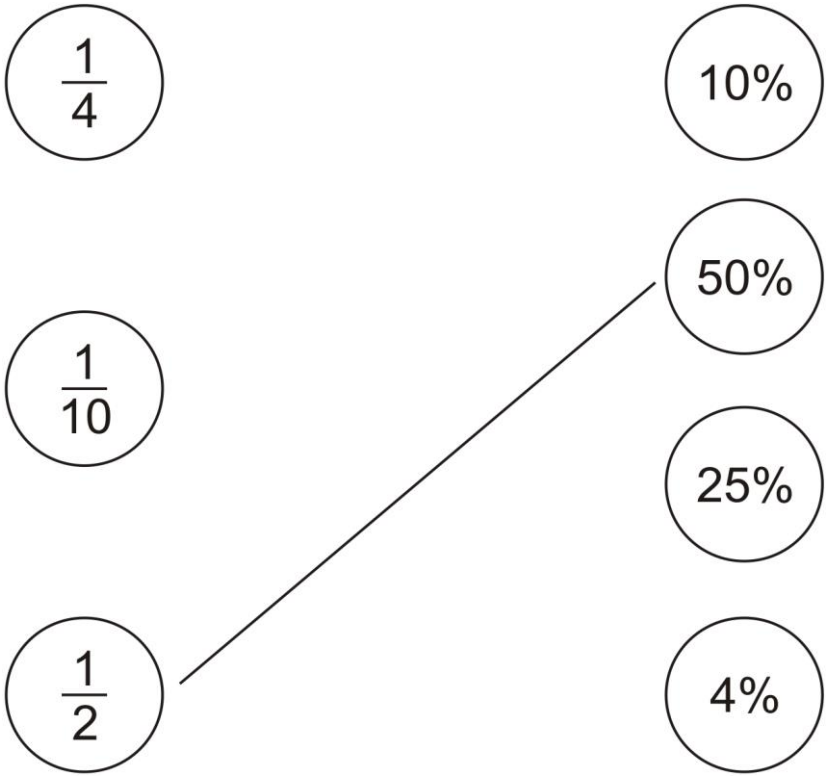
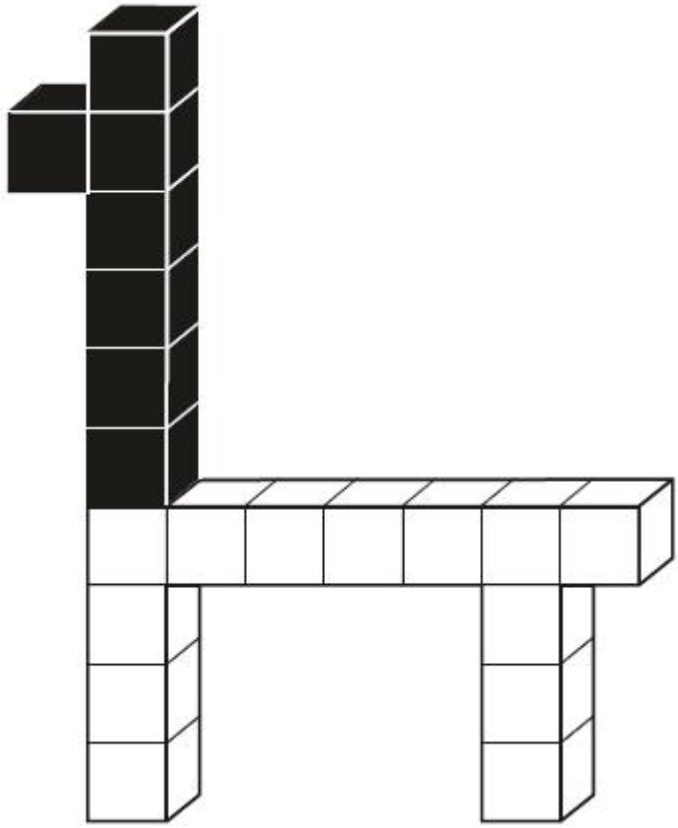
Q1. Draw a line to join each fraction to a percentage of the same value.



1 mark

Q2. This model is made with 20 cubes.



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

%

1 mark

Q3.

Hassan scores 40 out of 80 in a test.

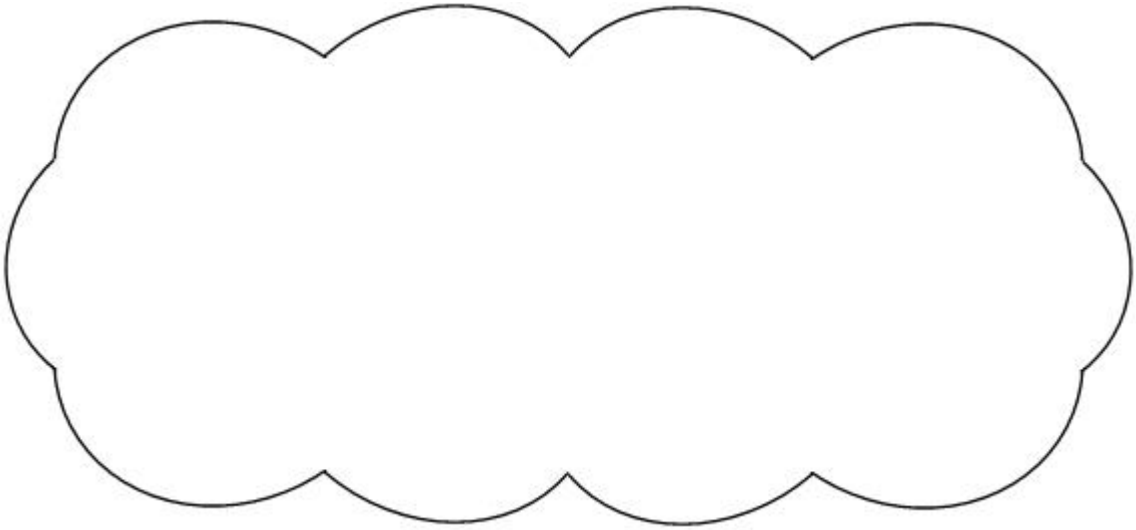
Kate scores 40% in the same test.

Who has the higher score?

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

Hassan / Kate

Explain how you know.



1 mark

Q4.

A cat sleeps for **12 hours** each day.

50% of its life is spent asleep.

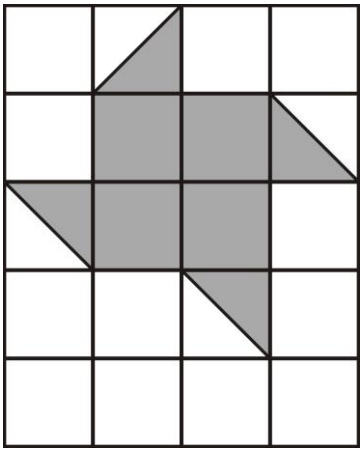
Write the missing percentage.

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

[ ] % of its life is spent asleep.

1 mark

Q5. Here is a grid of 20 squares. What percentage of the grid is shaded?



%

1 mark

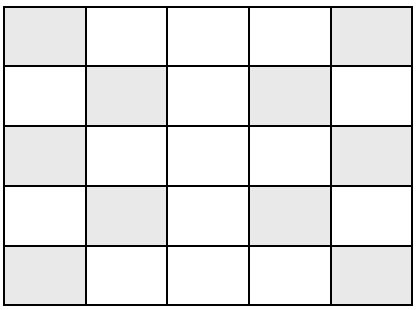
Q6. Write these in order of size, starting with the smallest.

$\frac{3}{4}$ 0.34 0.7 43%

smallest

1 mark

Q7. Here is a pattern on a grid. What **percentage** of the grid is shaded?



%

1 mark

Q8.

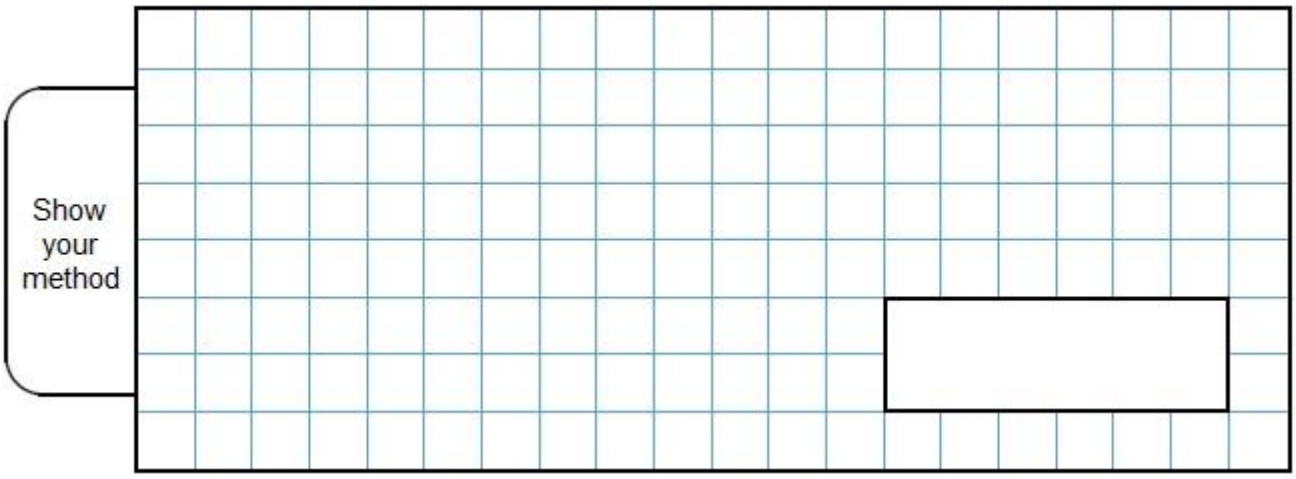
Jack chose a number.

He multiplied the number by 7

Then he added 85

His answer was 953

What number did Jack choose?



2 marks

Q9.

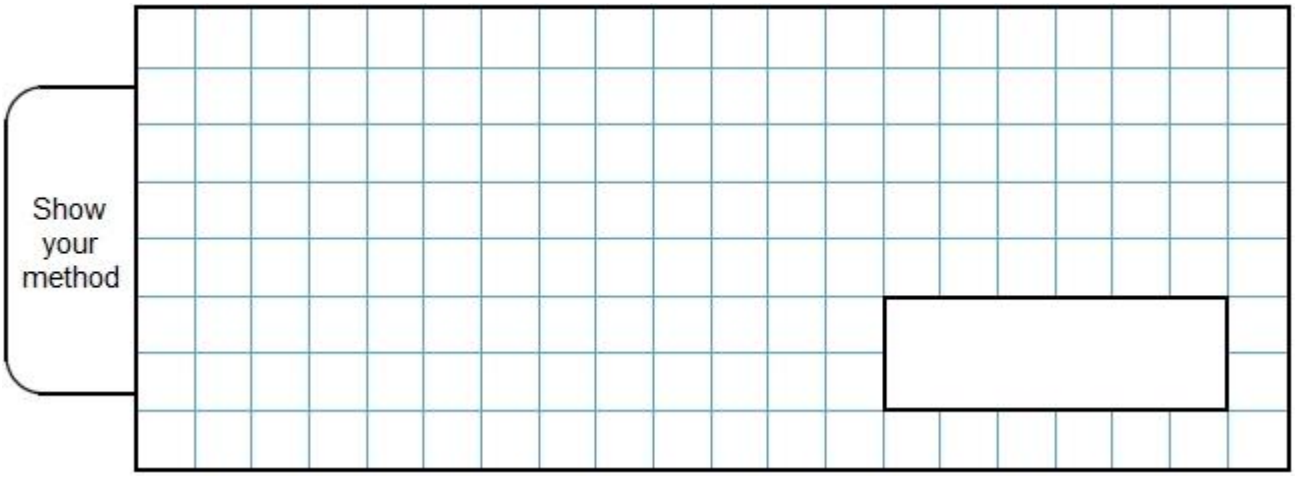
Emily chooses two numbers.

She adds the two numbers together and divides the result by 2

Her answer is 44

One of Emily's numbers is 12

What is Emily's other number?



2 marks

Q10.

Dev says,

Which expression shows how much money Dev has left?

a is the amount of money, in pounds, that Dev gave away.

Tick **one**.

$10 + a$ ☐

$10 \div a$ ☐

$a - 10$ ☐

$10 - a$ ☐

$a \times 10$ ☐

1 mark

Q11. Josh thinks of a number.

He adds 4

He multiplies his result by 3

Then he takes away 9

His final answer is 90

What number did Josh start with?

1 mark

Q12. Lara chooses a number less than 100

She divides it by 3 and then subtracts 11

She then divides this result by 2

Her answer is 10.5

What was the number she started with?

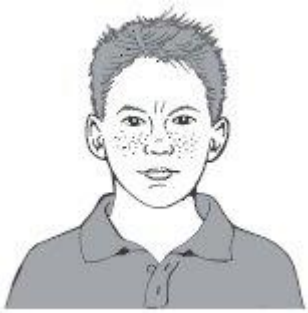
Show your method

2 marks

Q13. What is the value of $4x + 7$ when $x = 5$?

1 mark

Q14. Liam thinks of a number.



He divides it by 9 and then adds 25 to the result.

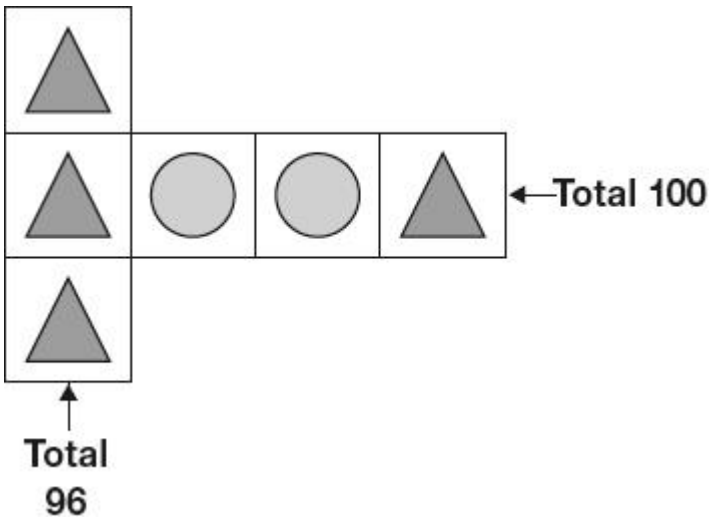
His answer is 36

What number did Liam start with?

Show your method

2 marks

Q15. Each shape stands for a number.



Work out the **value** of each shape.

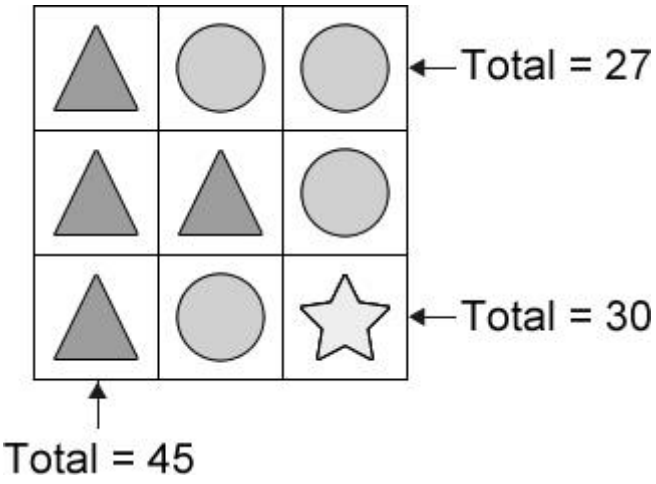
= _____

1 mark

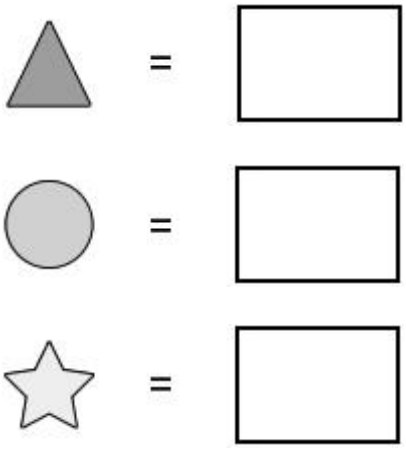
= _____

1 mark

Q16. Each shape stands for a number.



Work out the **value** of each shape.



1 mark

Q17.

n stands for a number.

$n + 7 = 13$

What is the value of $n + 10$?

1 mark

Q18.

a and b each represent a whole number between 1 and 10

$$2a + b = 8$$

Write the three possible combinations of a and b
One is done for you.

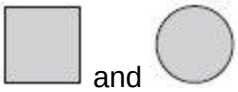
when a = 1 b = 6

when a = ☐ b = ☐

when a = ☐ b = ☐

2 marks

Q19.

 and each stand for a different number.

= 34

What is the value of ?

☐

1 mark

Q20.

$\boldsymbol{n} = 22$

What is $2\boldsymbol{n} + 9$?

1 mark

$2\boldsymbol{q} + 4 = 100$

Work out the value of $\boldsymbol{q}$.

$\boldsymbol{q} =$

1 mark

Q21.

Here is an equation.

$m - 2n = 10$

When $n = 20$ what is the value of m?

$m =$ _____

1 mark

When $m = 20$ what is the value of n?

$n =$ _____

1 mark

Q22.

$$x + 2y = 20$$

x and y are whole numbers **less than 10**

What could x and y be?

$x =$ ☐

$y =$ ☐

1 mark

Q23.

Write these lengths in order, starting with the shortest.

3.5 cm

$\frac{1}{2}$ m

20 cm

25 mm

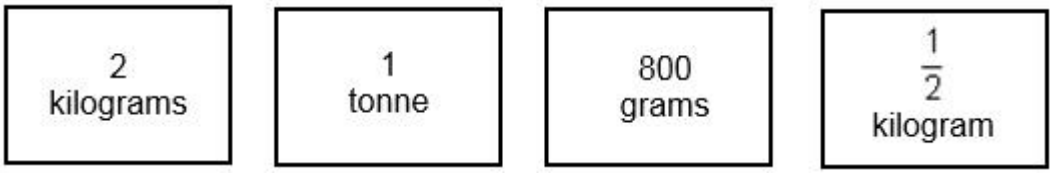
☐ ☐ ☐ ☐

shortest

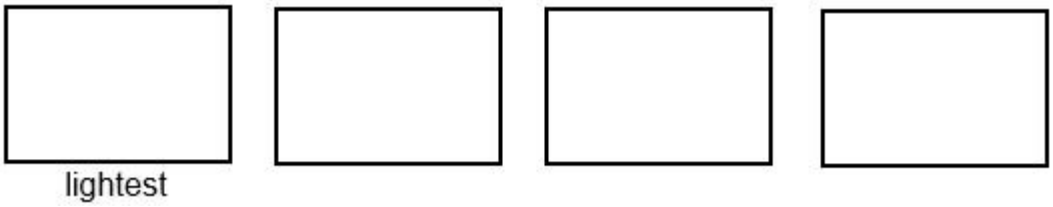
1 mark

Q24.

Here are four masses.



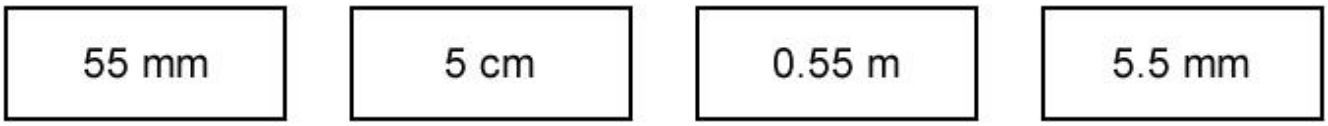
Write the masses in order, starting with the lightest.



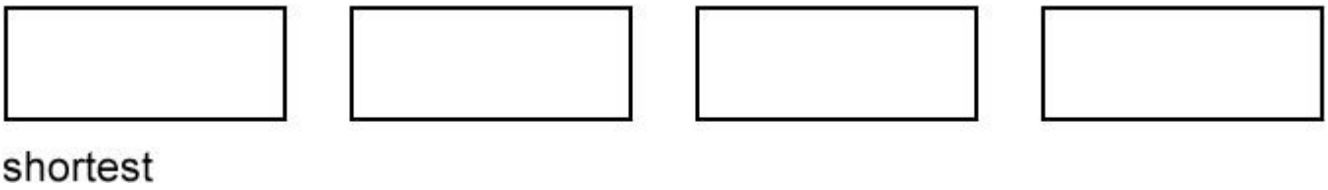
1 mark

Q25.

Here are four lengths.



Write the lengths in order, starting with the shortest.



1 mark