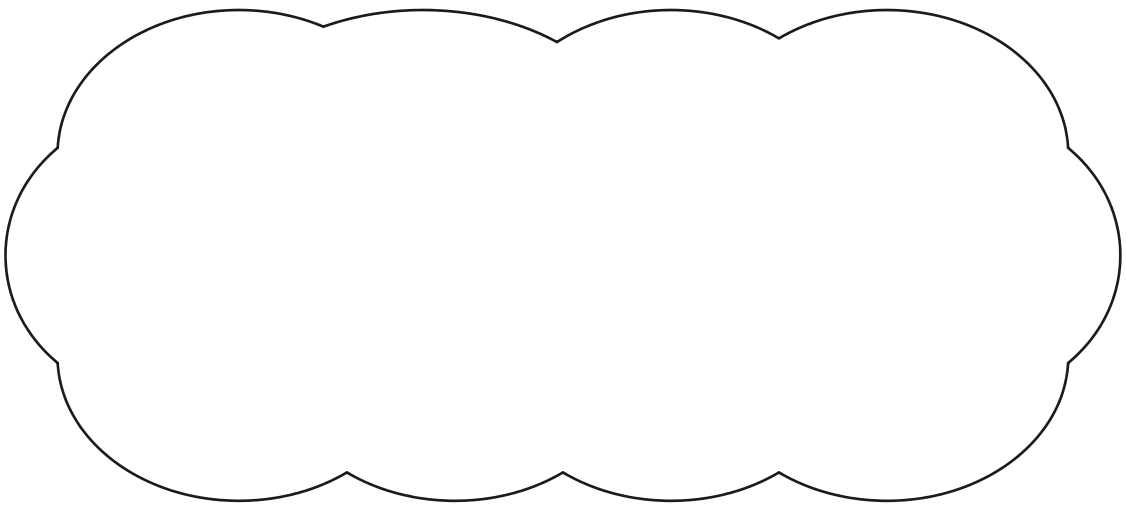
1. A square always has four sides.

Is it true that a four-sided shape is **always** a square?

Circle **Yes** or **No**. Yes / No

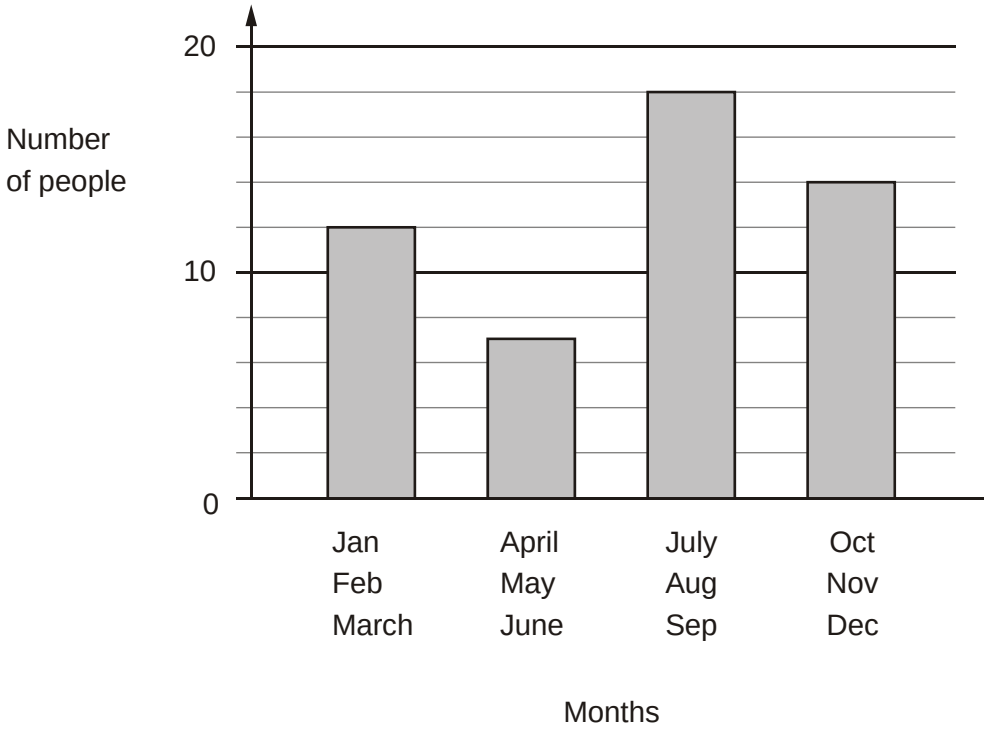
Explain how you know.



1 mark

2. Class 6 did a survey of birthday dates.

This chart shows the number of people with birthdays in each three months of the year.



From the chart, how many people have a birthday before July?

1 mark

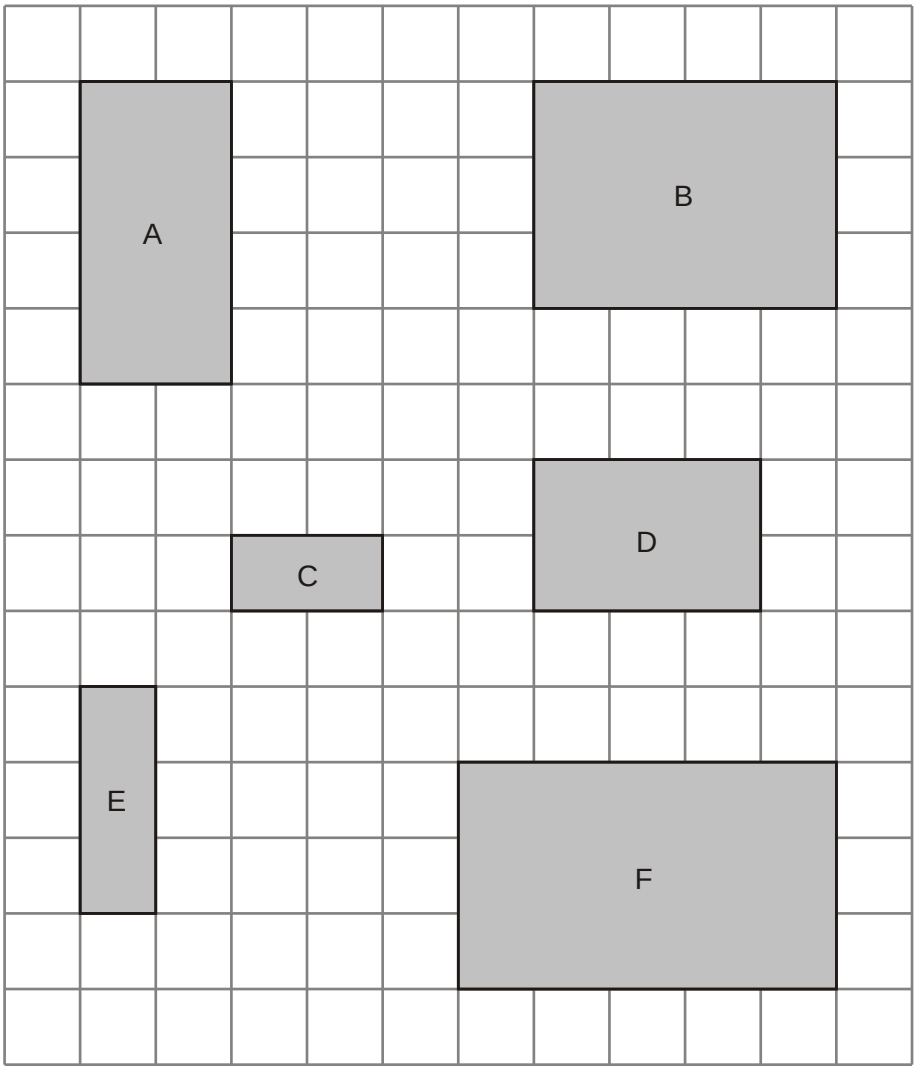
Nobody has a birthday in October.

Six people have a birthday in November.

How many people have a birthday in December?

1 mark

3. Here are six rectangles on a grid.



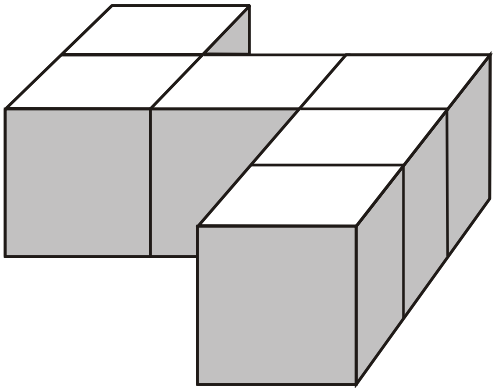
Which **two** rectangles fit together, without overlapping, to make a **square**?

..... and .....

1 mark

4. Emily has 6 cubes.

She sticks them together to make this model.



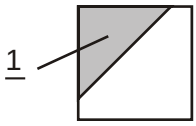
She paints the sides of the model grey all the way round.

She leaves the top and the bottom of the model white.

How many of the cubes in the model have **exactly two** faces painted grey?

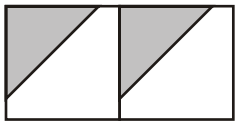
1 mark

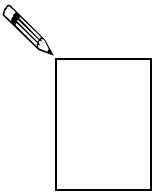
5. $\frac{1}{3}$ of this square is shaded.



The same square is used in the diagrams below.

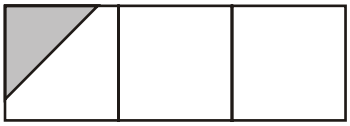
What fraction of this diagram is shaded?

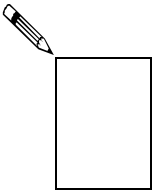




1 mark

What fraction of this diagram is shaded?





1 mark

6. Ben thinks of a number.

He adds half of the number to a quarter of the number.

The result is 60

What was the number Ben first thought of?

Show your **working**. You may get a mark.

2 marks

7. The numbers in this sequence increase by 7 each time.

1 8 15 22 29 ....

The sequence continues in the same way.

Will the number 777 be in the sequence?

Circle **Yes** or **No**. Yes / No

Explain how you know.

1 mark

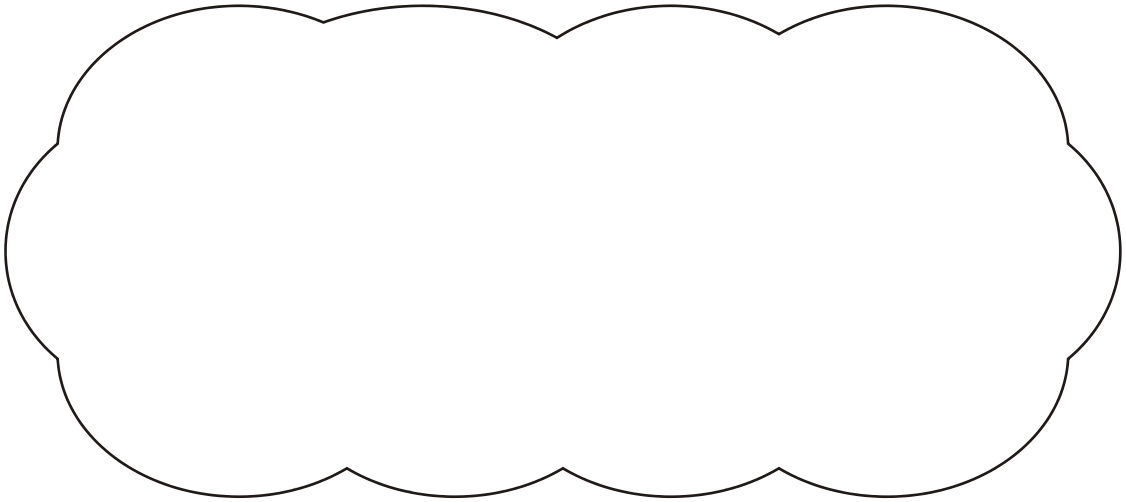
8. Nisha says,

'When you halve any even number, the answer is always an odd number'.

Is she correct?

Circle **Yes** or **No**. Yes / No

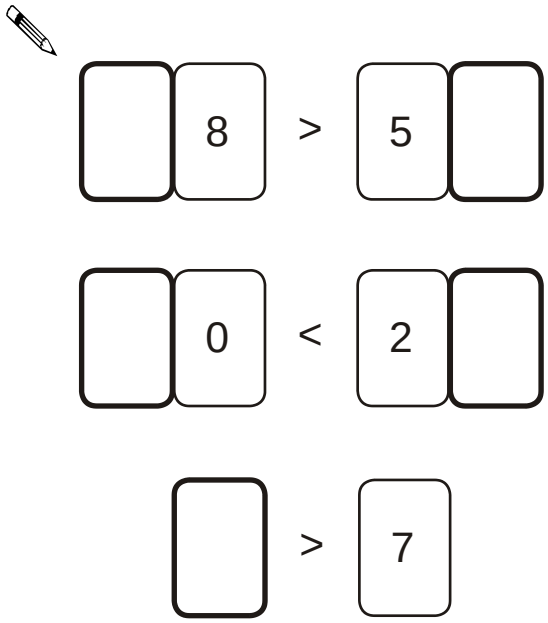
Explain how you know.



1 mark

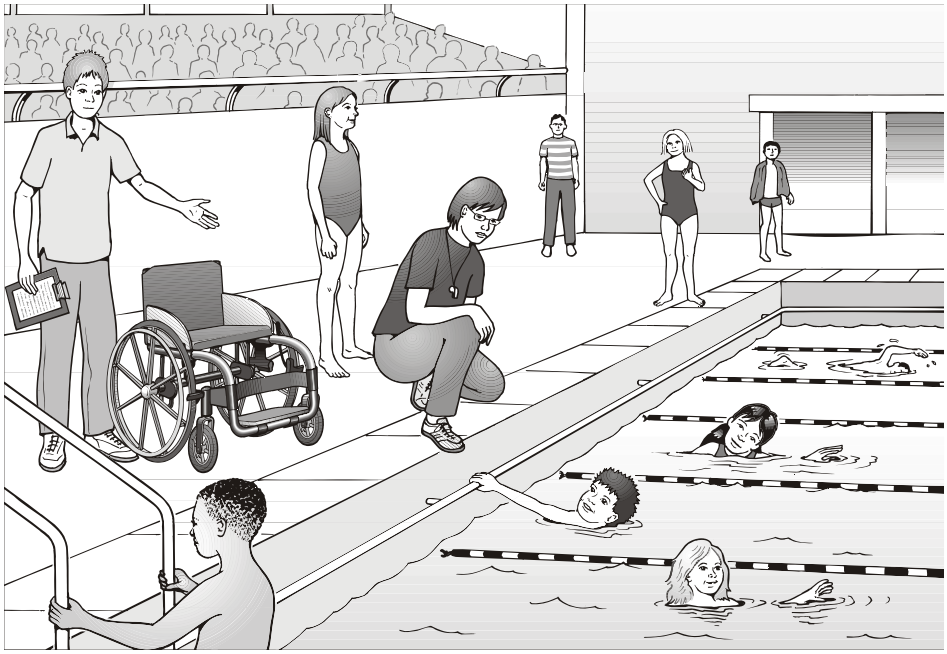
9. Here are five digit cards.

Use each card **once** to complete the statements below.



2 marks

10.



Emily, Ben and Nisha take part in a sponsored swim to collect money for charity.

Emily collects £2.75 **more** than Nisha.

Ben collects £15

Nisha collects £7 **less** than Ben.

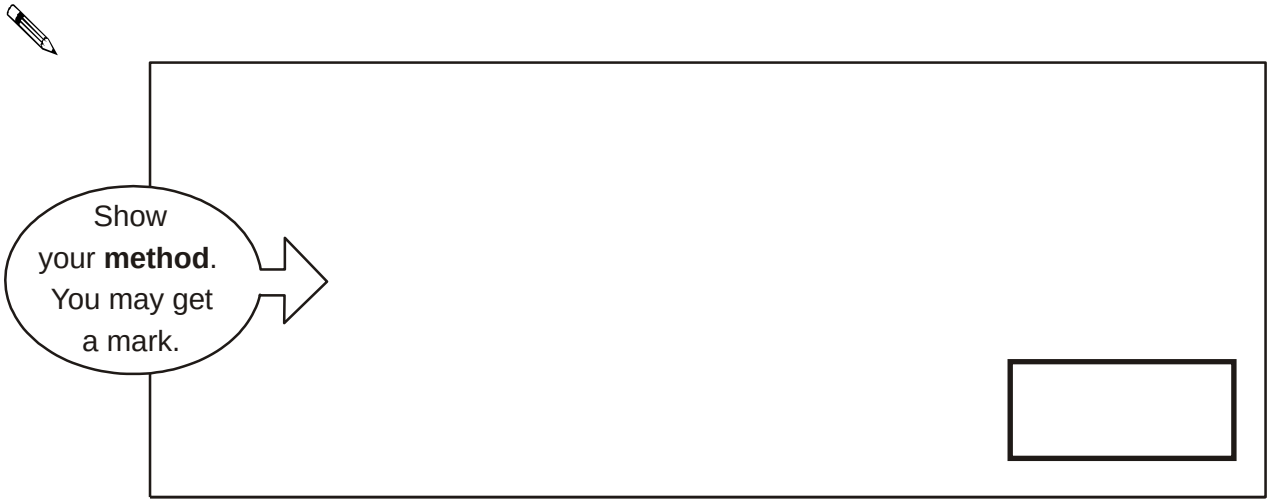
Altogether how much money do the three children collect?

Show your **method**. You may get a mark.

£

2 marks

11. Find the multiple of 45 that is closest to 8000

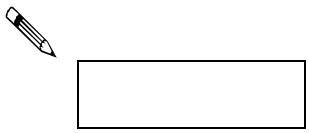


2 marks

12. ***m*** stands for a whole number greater than 10 and less than 20

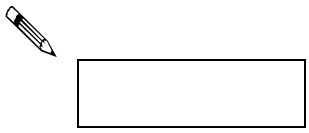
n stands for a whole number greater than 2 and less than 10

What is the **smallest** number that ***m* × *n*** could be?



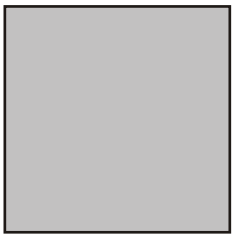
1 mark

What is the **largest** number that ***m* – *n*** could be?



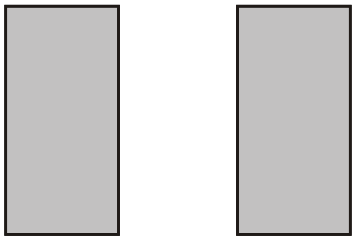
1 mark

13. The perimeter of a square is 72 centimetres.



Not actual size

The square is cut in half to make two identical rectangles.



What is the perimeter of **one** rectangle?

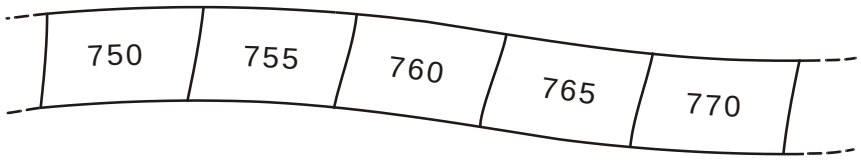
Show your **method**. You may get a mark.

cm

2 marks

14. Here is part of a number sequence.

The numbers increase by the same amount each time.



The sequence continues.

Circle **all** of the numbers below that would appear in the sequence.

840 905 989 1000 2051

1 mark

15. Write **one** number which fits **all three** of these statements.

It is a multiple of 4

It is a multiple of 6

It ends in '8'

1 mark

Explain why a number which ends in ‘3’ **cannot** be a multiple of 4

1 mark

16. A shop sells notebooks and pens.

Hassan bought **a notebook** and **a pen**.

He paid **£1.10**

Kate bought **a notebook** and **2 pens**.

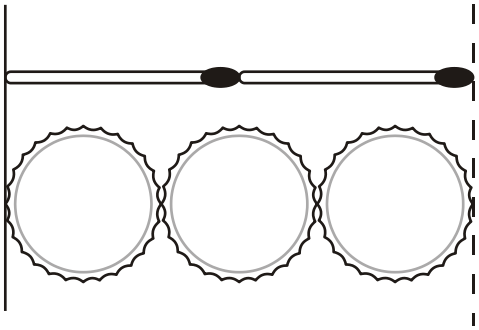
She paid **£1.45**

Calculate the cost of **a notebook**.

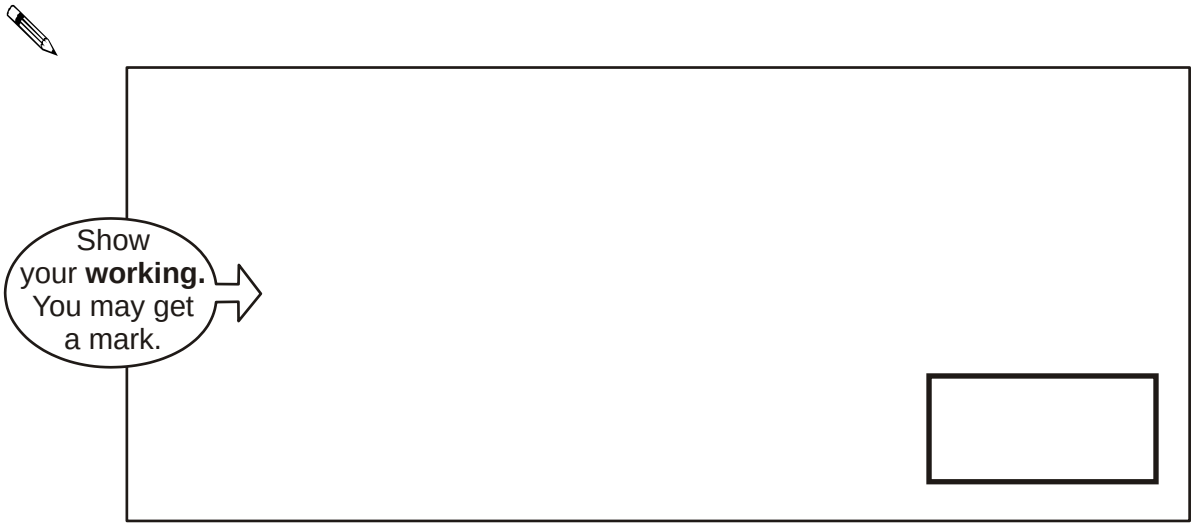
Show your **working**. You may get a mark.

2 marks

17. Two matchsticks have the same length as three bottle tops.

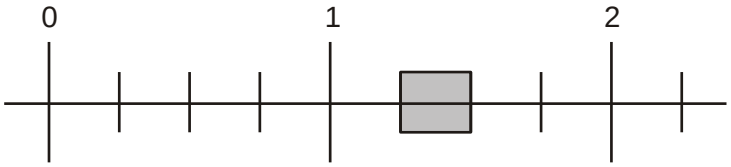


How many bottle tops will have the same length as 50 matchsticks?



2 marks

18. Part of this number line is shaded.



Circle **all** the numbers below that belong in the shaded part of the number line.

1.1 1.4 $1\frac{1}{3}$ $1\frac{1}{5}$

1 mark

19. Jamie draws a triangle.

He says,

'Two of the three angles in my triangle are obtuse'.

Explain why Jamie **cannot** be correct.

1 mark

20. The time is 10:35am.

Kate says,

'The time is closer to 11:00am than to 10:00am'.

Explain why Kate is correct.

1 mark

21. Here are some amounts of money.

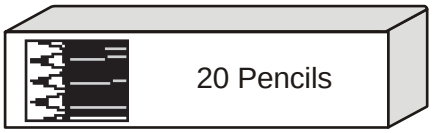
Circle **all** the amounts that can be made with **three** coins.

71p **72p** **73p** **74p** **75p**

1 mark

22. 50 children need **two** pencils each.

There are 20 pencils in a box.

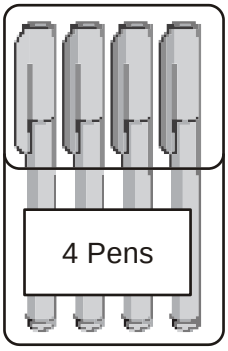


How many boxes of pencils are needed?

boxes

1 mark

50 children need **one** pen each.



Pens are sold in packs of 4

How many packs of pens need to be bought?

packs

1 mark

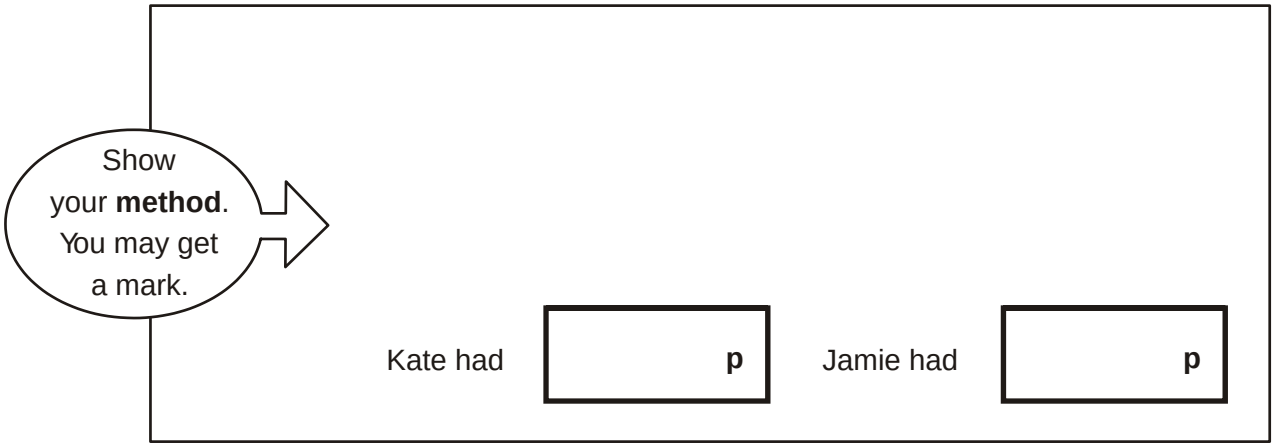
23.

Kate and Jamie each have some money.

Altogether they have **£1.50**

Kate gives Jamie **10p** so that they both have the same amount.

How much money did each have at the start?



2 marks

24. Hassan scores 40 out of 80 in a test.

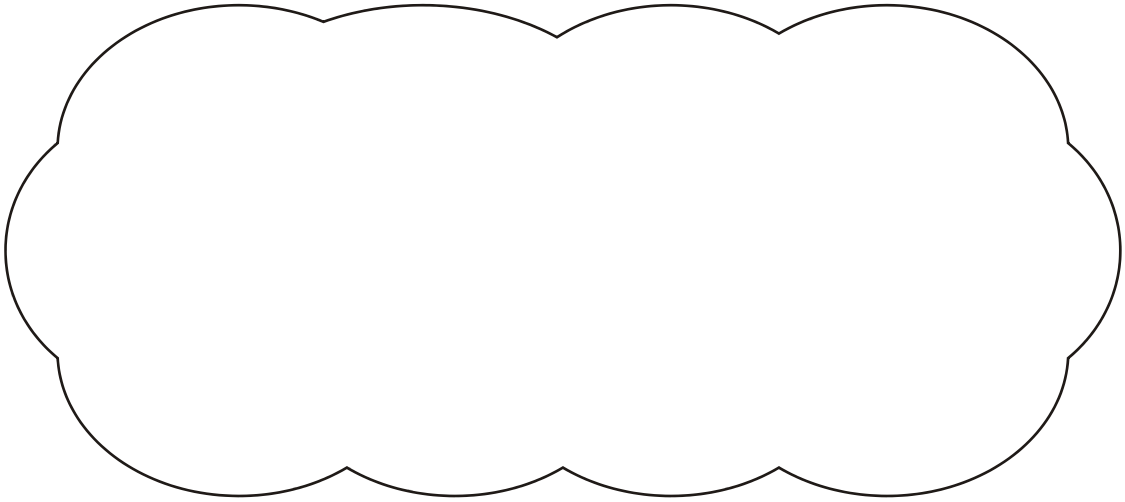
Kate scores 40% in the same test.

Who has the higher score?

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

Hassan / Kate

Explain how you know.



1 mark

25. Two whole numbers are each **between 50 and 70**

They multiply to make 4095

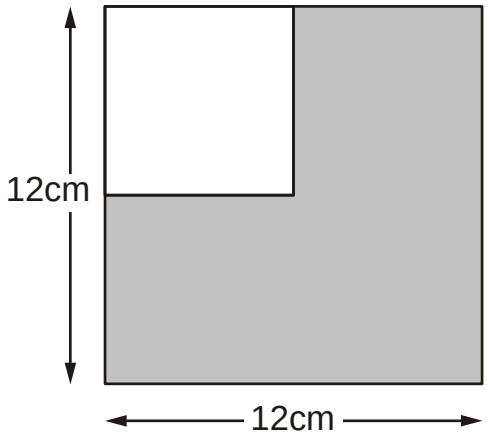
Write in the missing numbers.

☐ × ☐ = **4095**

1 mark

26. A white square is painted in one corner of a grey square.

Each side of the white square is **half** the length of a side of the grey square.



Not actual size

What is the **area** of the grey section?

Show your **method**. You may get a mark.

cm²

2 marks

27. Lin needs to solve this problem.

'How many children are in the class?'

Tick (✓) **all** the information that Lin needs to solve her problem.

- ☐ There are 9 girls in the class.
- ☐ 5 girls in the class wear glasses.
- ☐ There are twice as many boys as girls in the class.

1 mark

David needs to solve this problem.

'How much do two oranges and one apple cost?'

Tick (✓) **all** the information that David needs to solve his problem.

☐ An orange costs 5p more than an apple.

☐ An apple costs 20p

☐ David has £1 7b

1 mark

28. Here is a number chart.

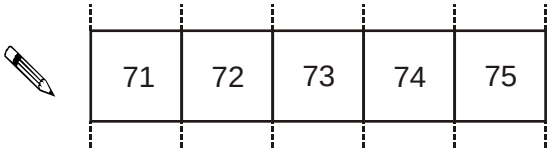
Every third number in the chart has a circle on it.

1	2	(3)	4	5
(6)	7	8	(9)	10
11	(12)	13	14	(15)
16	17	(18)	19	20
(21)	22			

The chart continues in the same way.

Here is another row in the chart.

Draw the missing circles.



1 mark

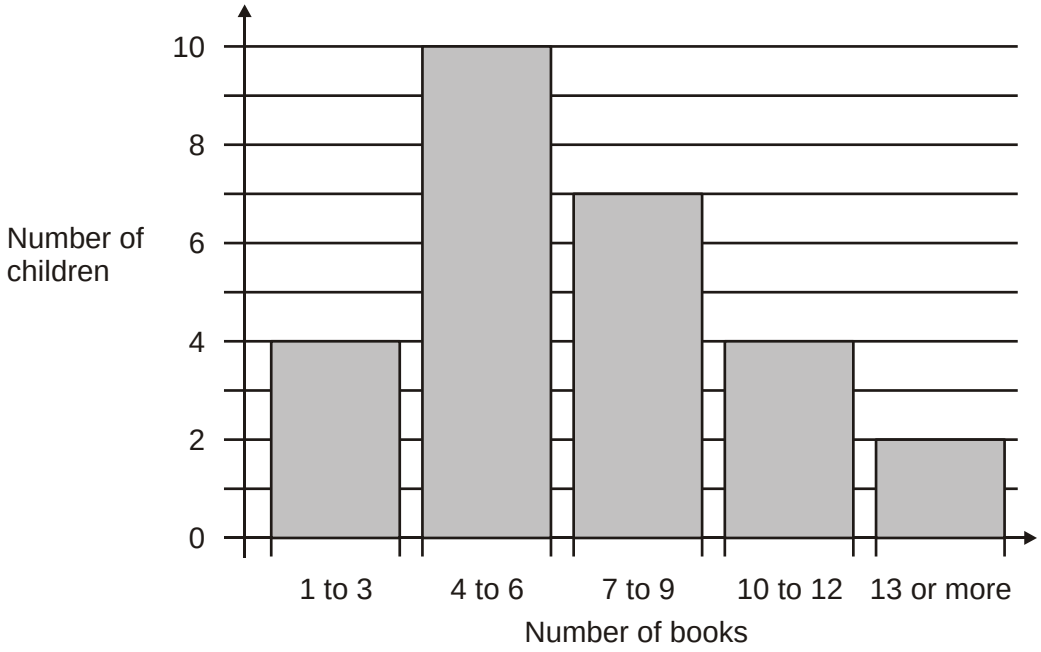
Will the number **1003** have a circle on it?
Circle **Yes** or **No**.

Yes / No

Explain how you know.

1 mark

29. This chart shows the number of books some children read last month.



How many children altogether read **more than 9 books**?

1 mark

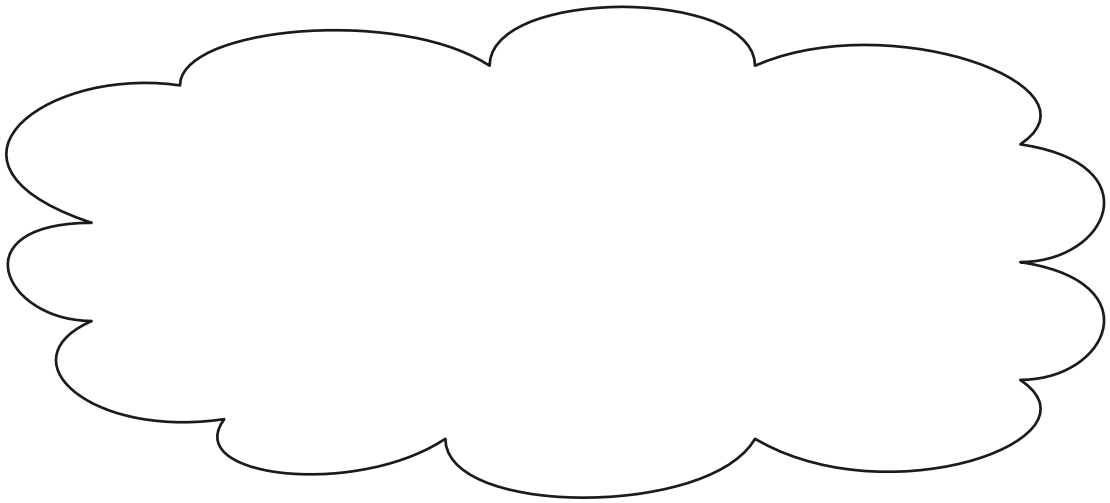
7 children read 4 books.

1 child read 5 books.

Lin says,

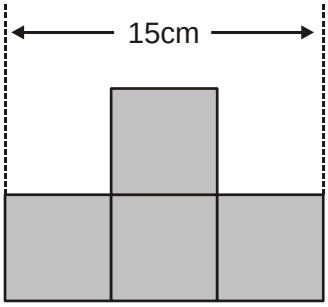
'That means 2 children read 6 books'.

Explain how she can work this out from the chart.



1 mark

30. This shape is made from 4 shaded squares.



Not actual size

Calculate the perimeter of the shape.

Show your **working.** You may get a mark.

cm

2 marks

31. k stands for a whole number.

k **+ 7** is greater than 100

k **– 7** is less than 90

Find **all** the numbers that k could be.

_____

2 marks

32. Each missing digit in this sum is a **9** or a **1**

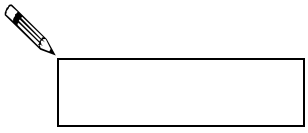
Write in the missing digits.

1 mark

33. Here is a sorting diagram with four sections, **A**, **B**, **C** and **D**.

	multiple of 10	not a multiple of 10
multiple of 20	**A**	**B**
not a multiple of 20	**C**	**D**

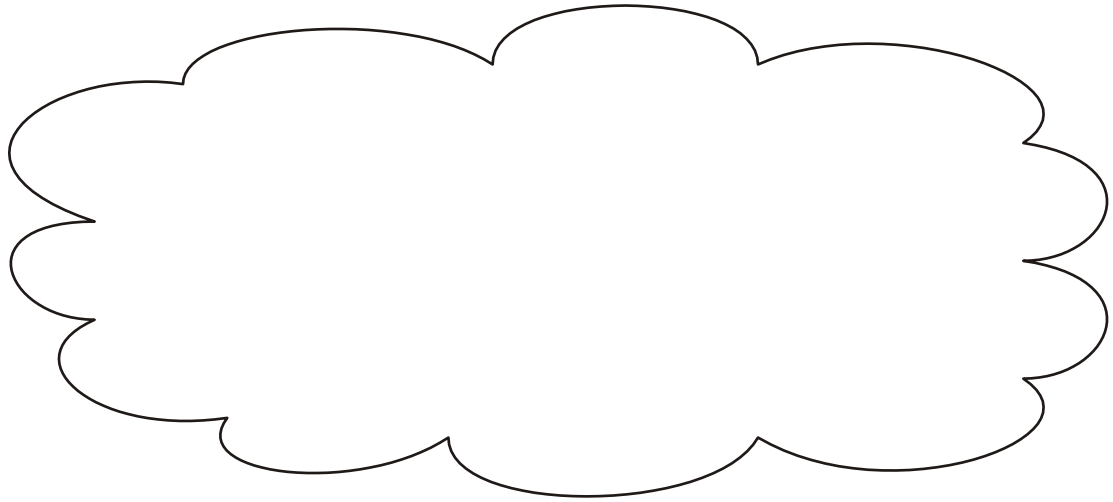
Write a number that could go in section **C.**



1 mark

Section **B** can never have any numbers in it.

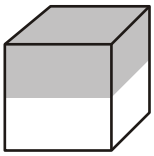
Explain why.



1 mark

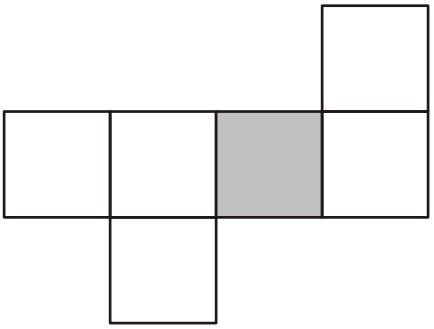
34. Here is a cube.

The cube is shaded all the way round so that the top half is grey and the bottom half is white.



Here is the net of the cube.

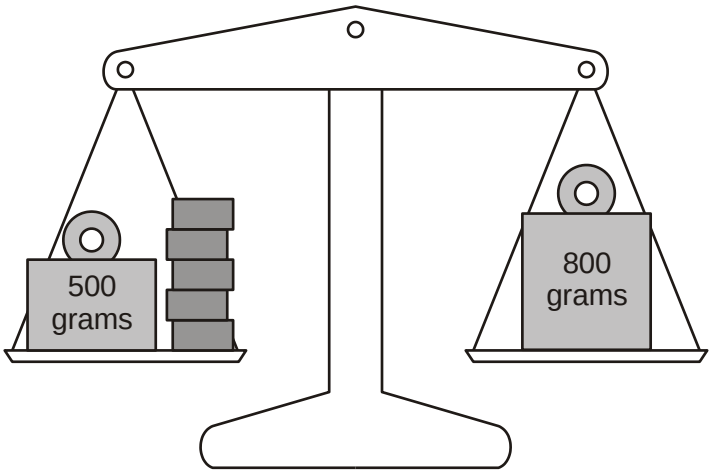
Complete the shading



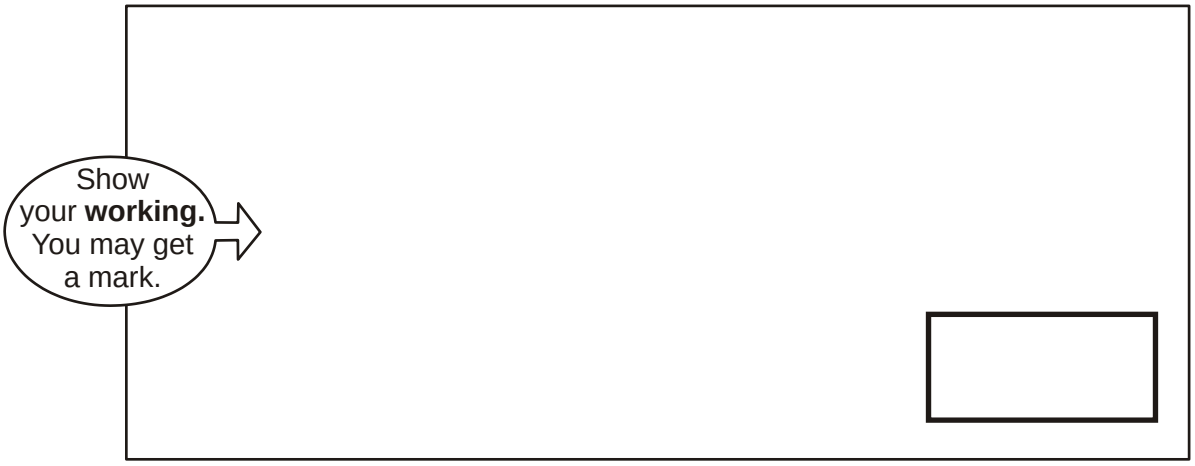
2 marks

35. Lin has five blocks which are all the same.

She balances them on the scale with two weights.

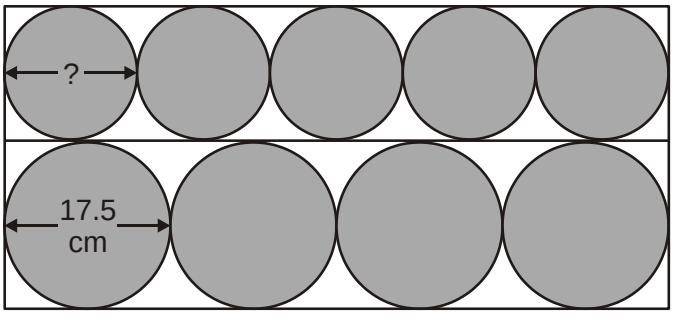


Calculate the weight of **one** block.



2 marks

36. Four large circles and five small circles fit exactly inside this rectangle.



Not actual size

The **diameter** of a large circle is **17.5** centimetres.

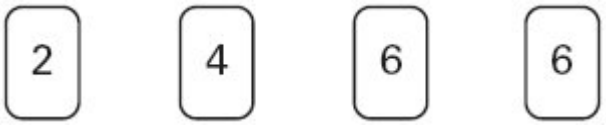
Calculate the **diameter** of a small circle.

Show your **method.** You may get a mark.

cm

2 marks

37. Here are some digit cards.



Write **all** the **three-digit** numbers, **greater than 500**, that can be made using these cards.

One has been done for you.

626

.....

.....

2 marks

38. Sapna makes up a game using seven cards.

Here are the cards.

Josh picks a card without looking.

If Josh picks an **odd** number then Sapna scores a point.

If Josh picks an **even** number then Josh scores a point.

Is this a fair game?
Circle Yes or No.

Yes / No

Explain how you know.

.....

.....

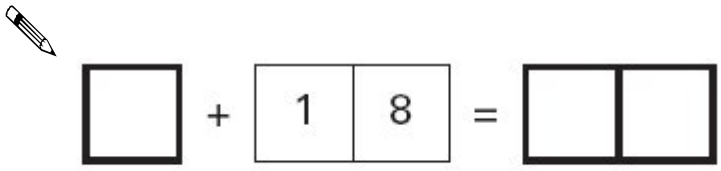
.....

1 mark

39. Each missing digit in these calculations is **2**, **5** or **7**

Write in the missing digits.

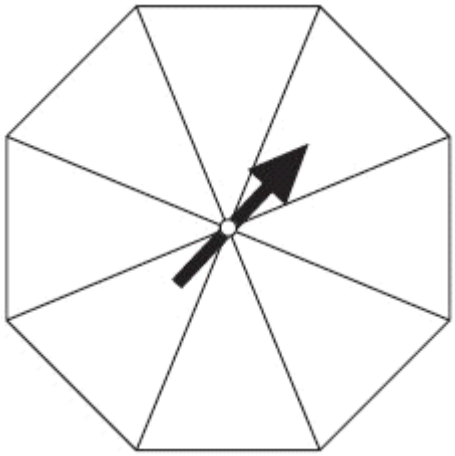
You may use each digit more than once.



2 marks

40. Here is a spinner which is a regular octagon.

Write 1, 2 or 3 in each section of the spinner so that
1 and 2 are equally likely to come up and
3 is the least likely to come up.



2 marks

41.

Sapna and Robbie have some biscuits.

Altogether they have **14** biscuits.

Sapna has **2 more** biscuits than Robbie.

How many biscuits do Sapna and Robbie each have?

Sapna ☐ **Robbie** ☐

1 mark

42. 17 multiplied by itself gives a **3-digit** answer.

1	7	×	1	7	=	2	8	9

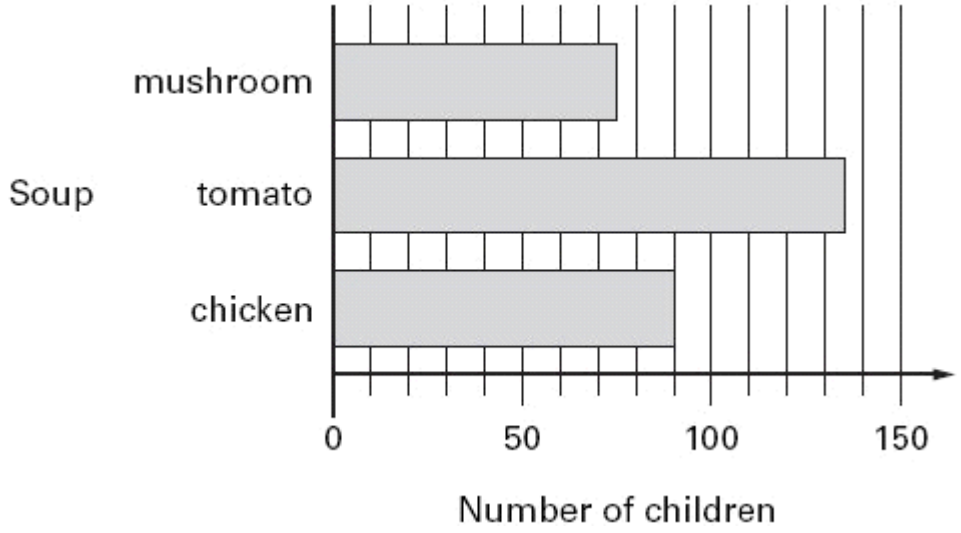
What is the **smallest** 2-digit number that can be multiplied by itself to give a **4-digit** answer?

☐☐ × ☐☐ = ☐☐☐☐

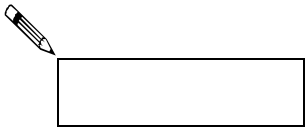
1 mark

43. All the children at Park School chose their favourite soup.

The graph shows the results.



How many **more** children chose **chicken** soup than **mushroom** soup?



1 mark

Robbie says,

‘More than half of the children chose tomato soup’.

Is he correct?
Circle Yes or No.

Yes / No

Explain how you can tell from the graph.

.....

.....

.....

1 mark

44. 7.4 8.1 9.4 10

Which two of these numbers, when multiplied together, have the answer closest to 70?

and

1 mark

45. On Monday all the children at Grange School each play one sport.

They choose either hockey or rounders.

There are **103** children altogether in the school.

27 girls choose hockey.

Write all this information in the table.
Then complete the table.

	hockey	rounders	Total
boys	22		
girls			53
Total			

2 marks

46. Write in the missing numbers in this multiplication grid.

×	5	☐	☐
4	20	36	32
☐	35	63	56
☐	30	54	48

2 marks

47. John says,

'Every multiple of 5 ends in 5'

Is he correct?

Circle Yes or No.

Yes / No

Explain how you know.

.....

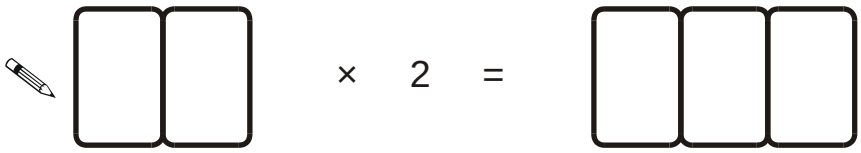
.....

.....

1 mark

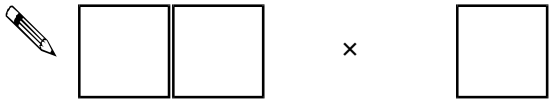
48. Here are five digit cards.

Use **all** five digit cards to make this correct.



1 mark

49. Use the digits **2, 3** and **4** once to make the multiplication which has the **greatest product.**



1 mark

50. Here are five number cards.

A and B stand for two **different** whole numbers.

The sum of all the numbers on all five cards is 30

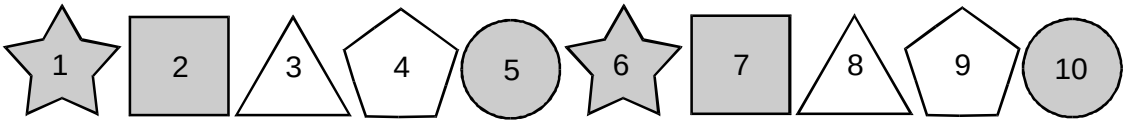
What could be the values of A and B?

A = ☐ **B =** ☐

1 mark

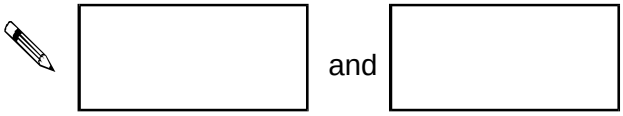
51. Here is a repeating pattern of shapes.

Each shape is numbered.



The pattern continues in the same way.

Write the numbers of the next two **stars** in the pattern.



1 mark

Complete this sentence.

Shape number 35 will be a circle because ...

.....

.....

.....

1 mark

52. An isosceles triangle has a perimeter of 12cm.

One of its sides is 5cm.

What could the length of each of the other two sides be?

Two different answers are possible.

Give **both** answers.

	cm	and	**cm**
	cm	and	**cm**

2 marks

53. 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.

.....

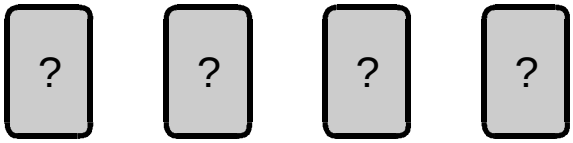
.....

.....

1 mark

54. Debbie has a pack of cards numbered from 1 to 20

She picks four different number cards.

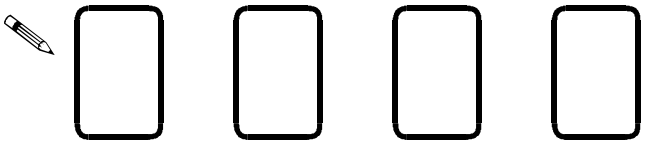


Exactly three of the four numbers are multiples of 5

Exactly three of the four numbers are even numbers.

All four of the numbers add up to less than 40

Write what the numbers could be.



1 mark

55.

30 children are going on a trip.

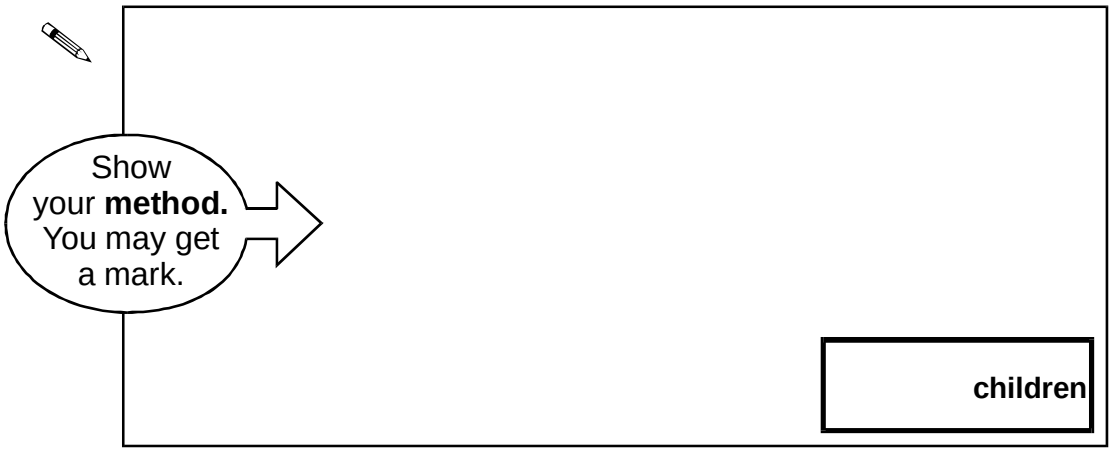
It costs **£5** including lunch.

Some children take their own packed lunch.

They pay only **£3**

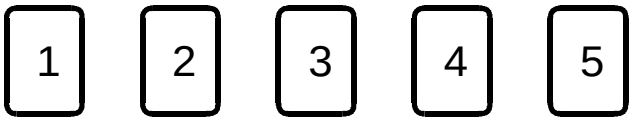
The 30 children pay a total of **£110**

How many children are taking their own packed lunch?

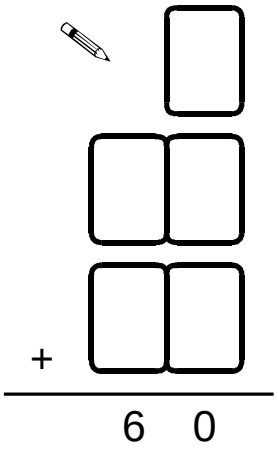


2 marks

56. Here are five digit cards.



Use all five digit cards once to make this sum correct.



1 mark

57. **k**, **m** and **n** each stand for a whole number.

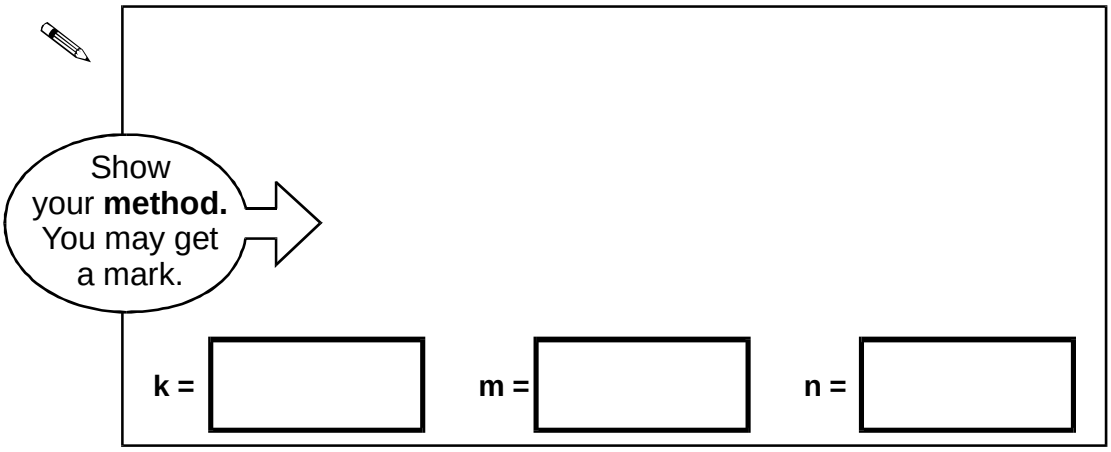
They add together to make 1500

$$k + m + n = 1500$$

m is **three times** as big as **n**.

k is **twice** as big as **n**.

Calculate the numbers **k**, **m** and **n**.



2 marks