testbase

Four operations 2

Name: _____

Class: _____

Date: _____

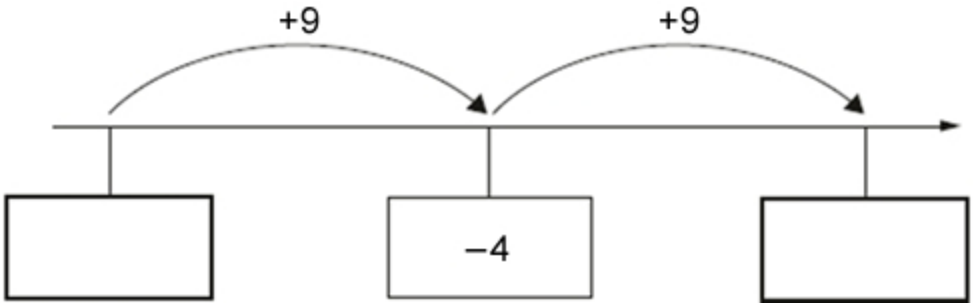
Time:

Marks: **62 marks**

Comments:

1. Here is part of a number line.

Write the missing numbers in the boxes.

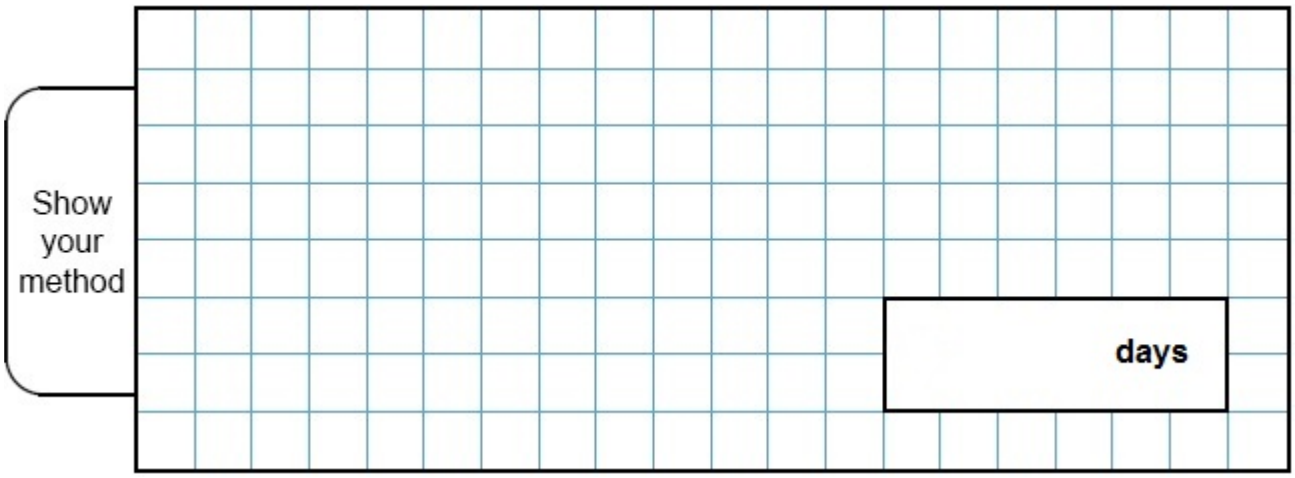


2 marks

2. A bag contains 1.5 kg of dog food.

Every day Mary gives 50 g of dog food to her dog.

How many days does the bag of dog food last?



2 marks

3. Here are six cards.

x 10	x 100	x 1000
÷ 10	÷ 100	÷ 1000

Use a card to complete each calculation.

7.4 ☐ = 0.74

7.4 ☐ = 7400

7.4 ☐ = 0.074

2 marks

4. Write the missing numbers in the sequence.

2 marks

5. Circle **three** numbers that add to make 650.

450 350 250 150 50

1 mark

6. Bananas cost **25p** each.

How many bananas can Joe buy for **£1.75**?

1 mark

7. Here are six digit cards.

Use **four** of the cards to make this addition correct.

1 mark

8. Doug and Lily are buying supplies for a school trip.

Doug buys **8** packs of apple juice cartons.

Lily buys **4** packs of orange juice cartons.

Doug says,

'I have four times as many cartons as Lily.'

Explain why Doug is correct.

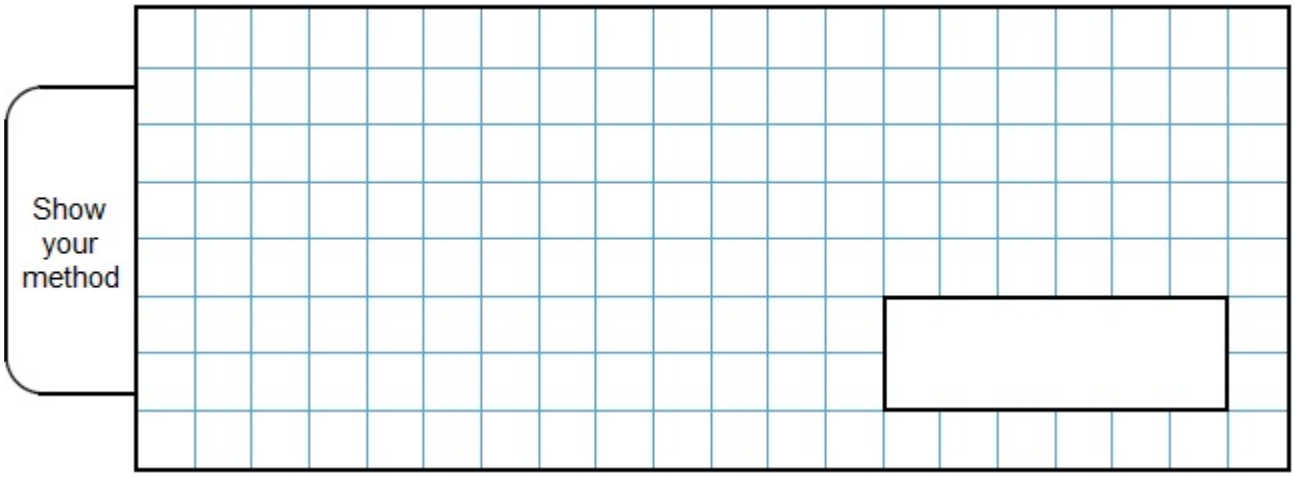
1 mark

9. At the start of August, there were 1,692 toy dinosaurs in the shop.

During August,

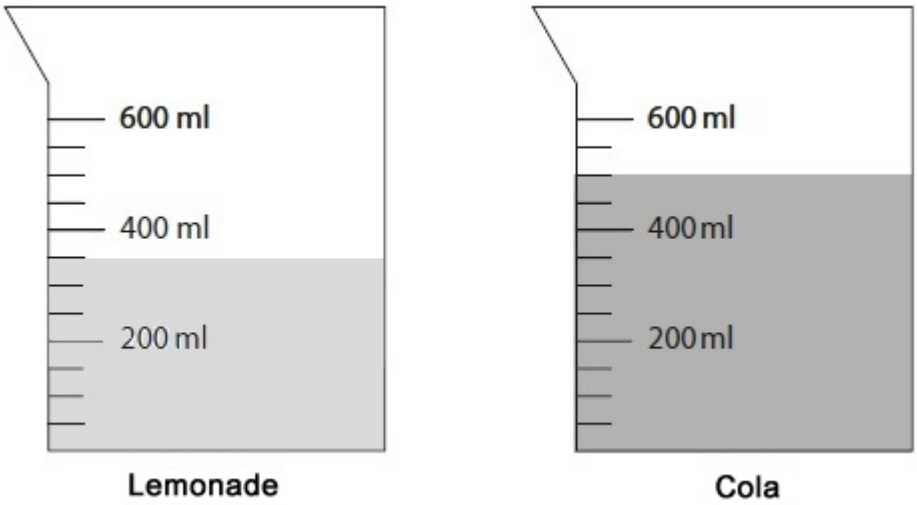
- 8,721 more toy dinosaurs were delivered
- 9,187 toy dinosaurs were sold.

How many toy dinosaurs were left in the shop at the end of August?



2 marks

10. One jug contains lemonade and the other jug contains cola.



How much **more** cola is there than lemonade?

ml

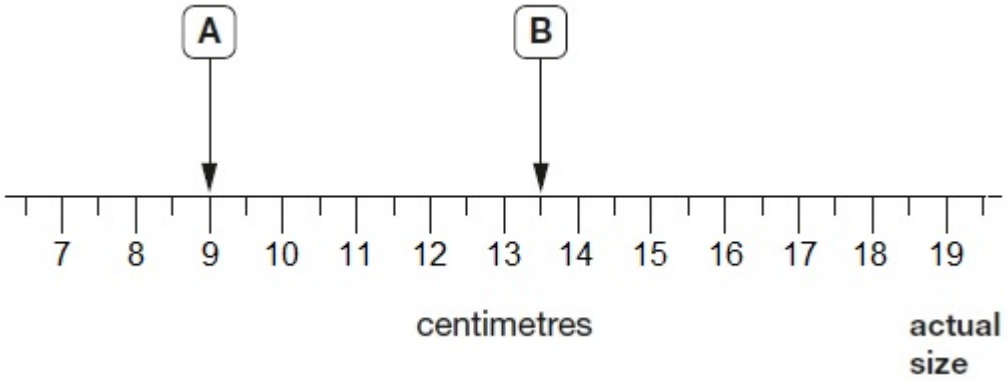
1 mark

11. Write the missing number to make this **division** correct.

85 ÷ ☐ = 8.5

1 mark

12. Here is part of a centimetre scale, with two points marked.



(a) What is the distance between point **A** and **B**?

☐ **cm**

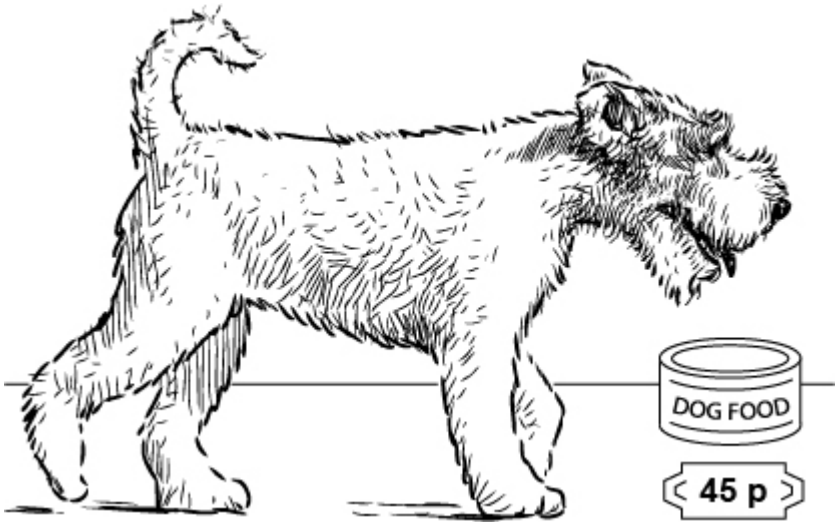
1 mark

(b) Point **C** is **twice as far** from point A as it is from point B.

On the scale above, mark one place where point C could be.

1 mark

13. Dina's dog eats one tin of dog food each day.



How much does it cost to feed Dina's dog for **6** days?

Show your method

£

2 marks

14. These are the prices of pineapples and oranges.

Pineapple
86p each

Oranges
£1.30 for 1kg

Joe buys **one pineapple** and **half a kilogram of oranges**.

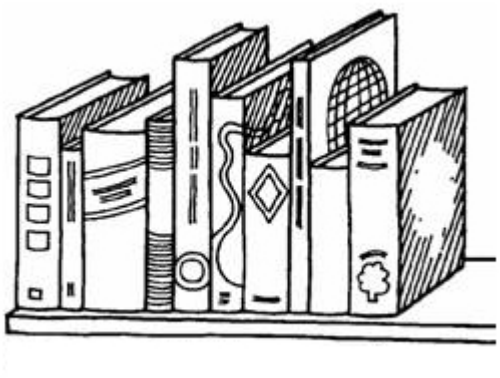
How much does he spend altogether?

Show your method

£

2 marks

15. Here is a book shelf.



One shelf holds **30** books.

(a) Sullivan has **96** books.

How many shelves does he need to hold **all** his books?

1 mark

(b) Lucy has **7** shelves **full** of books.

How many books does Lucy have altogether?

1 mark

16. Write the missing numbers.

$67 + \square = 125$

1 mark

$5 \times \square = 225$

1 mark

17. The numbers in this sequence increase by the same amount each time.

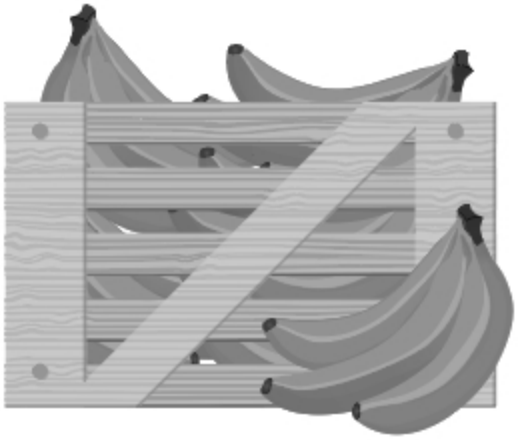
Write the two missing numbers.

$\square$ 620 650 680 $\square$

2 marks

18. (a) There are **5 bananas** in a **bunch**.

There are **17 bunches** in a **crate**.



How many bananas are there altogether in a **crate**?

1 mark

(b) There are **5 bananas** in a **bunch**.

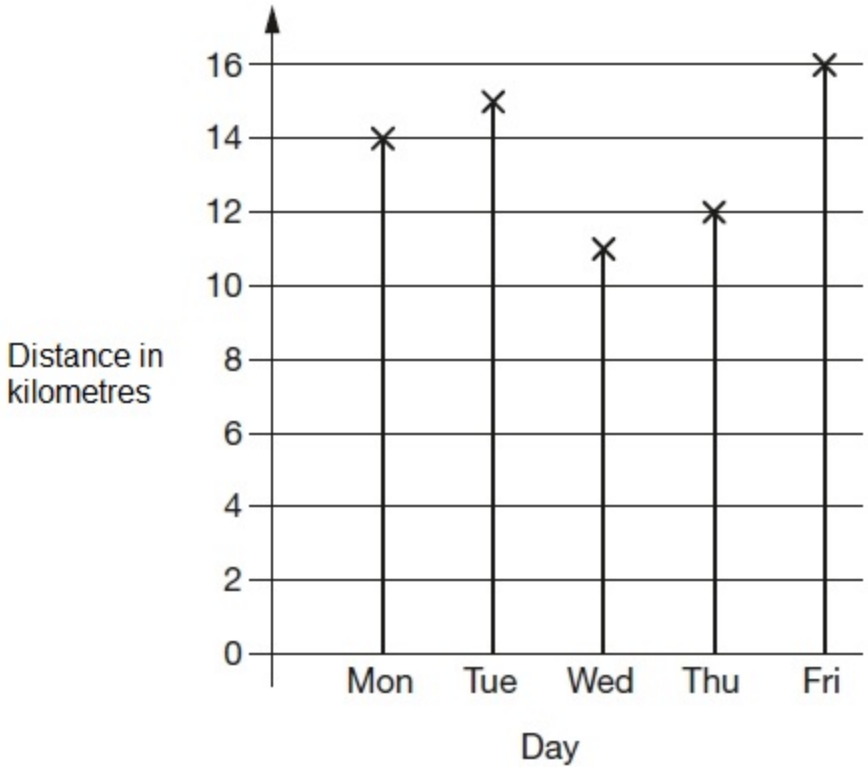
Kareem needs **70 bananas**.

How many **bunches** does he need?

1 mark

19. Ash went on a walking holiday in France.

This chart shows how far he walked each day.



(a) How much **further** did Ash walk on Monday than on Wednesday?

km

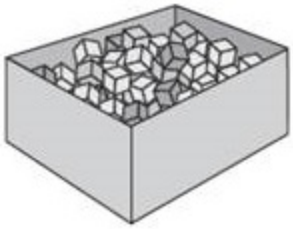
1 mark

(b) How far did Ash walk **altogether** on the three days he walked the most?

km

1 mark

20. Mark has a box of **130** bricks.



He uses some of the bricks to build a castle.

87 bricks are left over.

How many bricks has he used?

1 mark

Mark has **87** bricks left over.

He builds two more castles.

One castle uses **28** bricks and the other uses **36** bricks.

How many of his **87** bricks has he got left now?

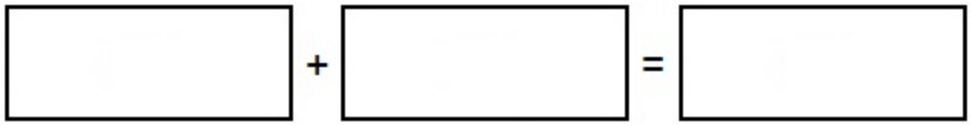
Show your method

2 marks

21. Andrew writes an answer to the calculation below.

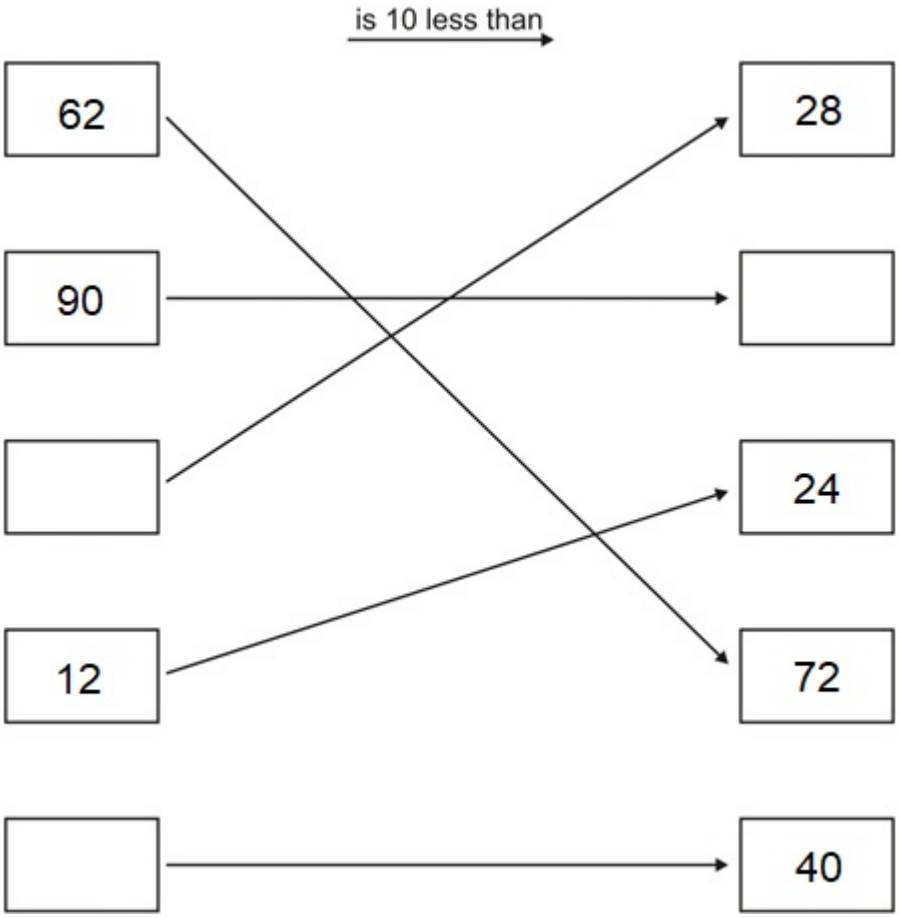
153 – 69 = 84

Now write an addition **to check Andrew's answer**.



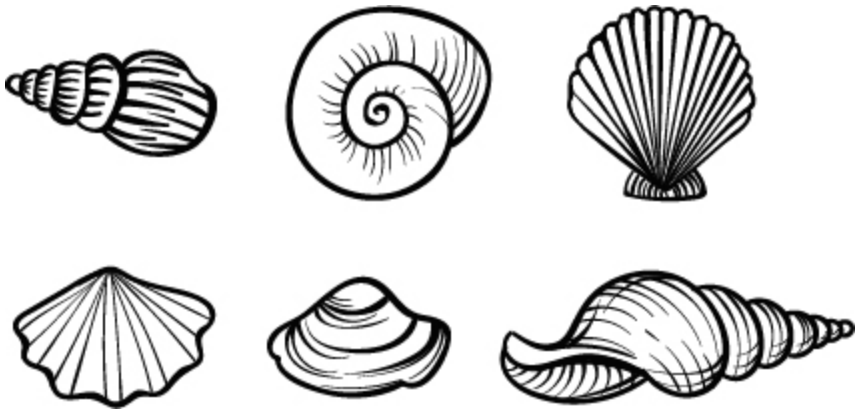
1 mark

22. Write the correct numbers in the 3 empty boxes.



2 marks

23. Kira, Rashid and Demi have collected 6 seashells each.



How many seashells do they have **altogether**?

seashells

1 mark

24. John has 48 sweets in a jar.

The jar is about **half full**.

Estimate how many sweets John will have when the jar is **full**.

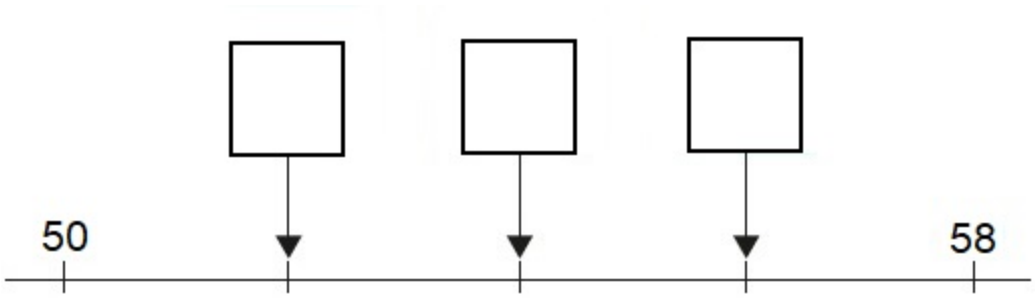
Circle the best estimate.

50 75 100 125 150

1 mark

25. The numbers on this number line go up by the **same amount** each time.

Write the missing numbers in the boxes.



1 mark

26. Circle **one** number in **each** box to make a total of 500

50	100	150
150	200	250
250	400	350
350		450

1 mark

27. Write six **different** numbers to make these sums correct.

$\square + \square = 32$

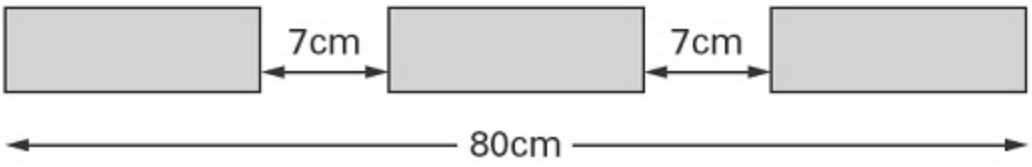
$\square + \square = 32$

$\square + \square = 32$

2 marks

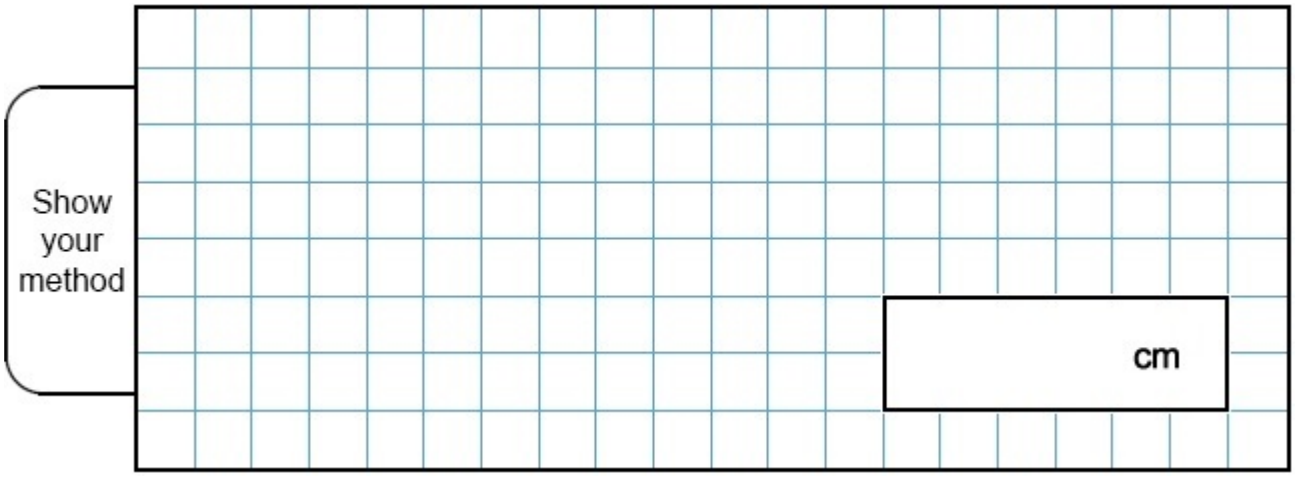
28. Three identical blocks are placed in line 80 centimetres long.

The gaps between the blocks are each 7cm.



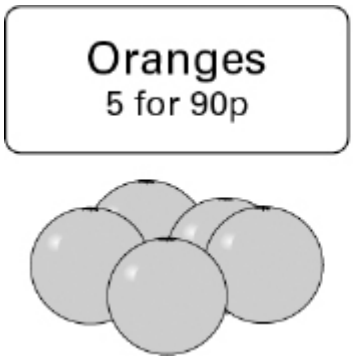
Not drawn to scale

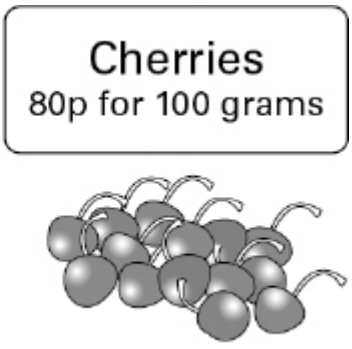
Work out the length of each block.



2 marks

29. These are the prices of fruit in a shop.





Emma buys 15 oranges.

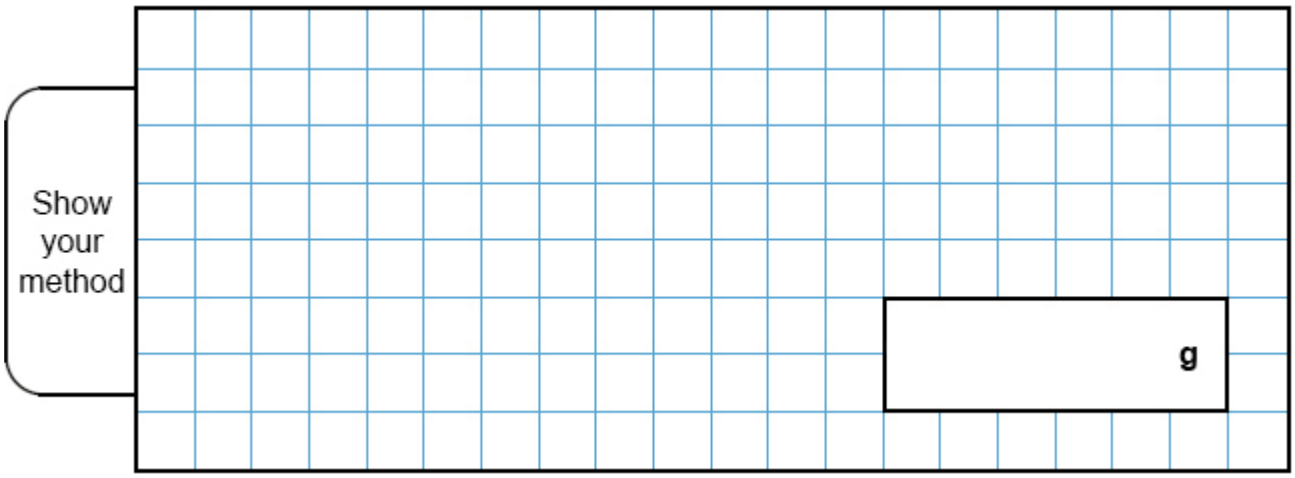
How much does she pay?

1 mark

Reshma buys some cherries.

They cost £1.20

How many grams of cherries does she buy?



2 marks

30. Luke buys **750** grams of apples.

Each apple weighs between **140** grams and **160** grams.

Circle the number of apples that Luke buys.

4 5 6 7 8

1 mark

31. Here are three signs.

Write in the signs to make these correct.

100 ☐ 10 × 10

100 ☐ 15 × 5

100 ☐ 20 × 6

1 mark

32. Here are some numbers.

6 2 32 5

Write each number in a box to make this number story correct.

There are ☐ sweets in a bag.

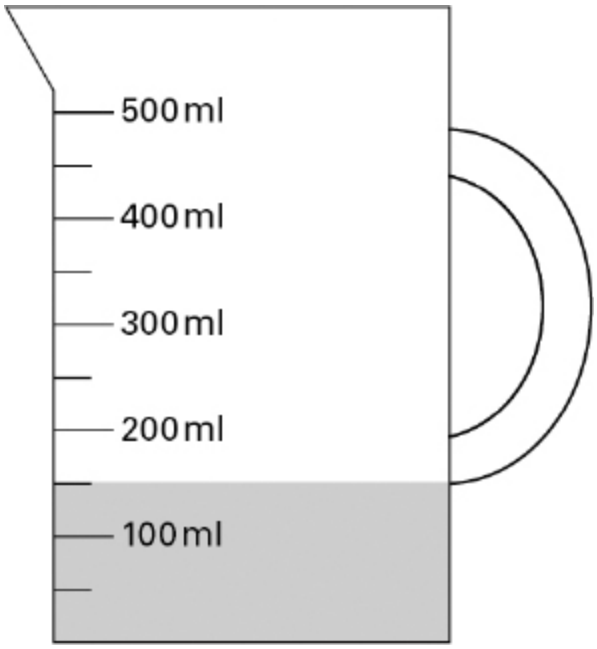
☐ friends share them equally.

Each friend gets ☐ sweets.

☐ sweets are left over.

1 mark

33. Here is a jug with some water in it.



How many **more** millilitres of water must be added so that there are **500 ml** in the jug?

ml

1 mark

34. There are **three** classes at Park School.

There are **78** children altogether.

Look at the table.

Children at Park School

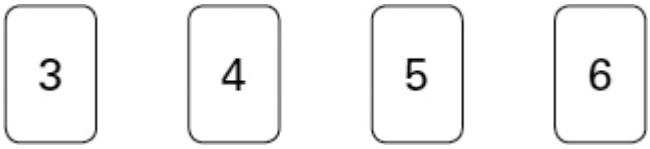
Class	Number of children
Class 1	23
Class 2	30
Class 3	?

Calculate how many children ate in Class 3

Show your method

2 marks

35. Here are four digit cards.



Use three of them to make this correct.

1 mark

36. Emma uses 5 shapes to balance a 50 g weight on a scale.

Each ☐ weighs 12 g.

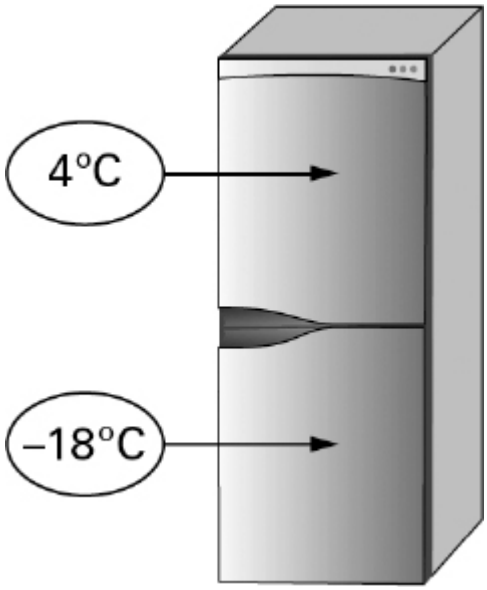
How much does each ● weigh?

Show your method

g

2 marks

37. This is a fridge-freezer.



The temperature in the fridge is 4°C.

The temperature in the freezer is –18°C.

What is the difference in temperature between the fridge and the freezer?

degrees

1 mark

38. Reshma buys 4 packets of balloons.

She pays with a £5 note and gets 40p change.

How much does **one packet** of balloons cost?

Show your method

2 marks

39. Circle **all** the numbers that are **one more than a multiple of 4**

11 17 25 34 40 49

1 mark

40. Write in four digits to make this correct.

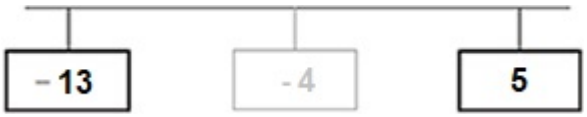
□□ × □□ = 1100

1 mark

Mark schemes

1.

Award **TWO** marks for both numbers correct as shown.



If the answer is incorrect, award **ONE** mark for one number correct.

***Do not** accept 13−*
Accept +5 in the right-hand box.

Up to 2

[2]

2.

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

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

- 1.5 kg = 1,500 g
  1,500 ÷ 50

*Answer need not be obtained for the award of **ONE** mark.*
*Units must be converted correctly for the award of **ONE** mark.*

Up to 2m

[2]

3.

Award **TWO** marks for all three calculations completed correctly, as shown:

7.4 **÷ 10** = 0.74

7.4 **× 1000** = 7400

7.4 **÷ 100** = 0.074

If the answer is incorrect, award **ONE** mark for two calculations correct.

Up to 2

[2]

4.

204001

1

324001

1

[2]

5. Three numbers circled as shown:

OR

Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.

[1]

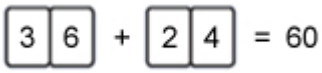
6. 7

1

[1]

7. 

OR



Numbers may be given in either order.

[1]

8. An explanation that shows Doug has four times as many cartons as Lily, e.g.

- 24 × 8 is 4 times as many as 12 × 4
- 192 is four times 48
- 192 ÷ 4 = 48
- 192 ÷ 48 = 4
- 48 × 4 = 192
- Doug buys twice as many packs of twice as many cartons, so it's doubled twice
- 24 is double 12 and 8 is double 4, so it's doubled twice
- Lily buys half the amount of packs and each pack has half the number of cartons, so she has $\frac{1}{4}$ of the amount.

Do not *accept vague or incomplete explanations, e.g.*

- *Doug buys more packs and there are more cartons in each bag*
- *Doug buys twice as many packs of twice as many cartons*
- *24 is double 12 and 8 is double 4.*

[1]

9. Award **TWO** marks for the correct answer of 1,226

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

- 1,692 + 8,721 = 10,413
  10,413 – 9,187

OR

- 9,187 – 8,721 = 466
  1,692 − 466

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

Up to 2m

[2]

10. 150 (ml)

[1]

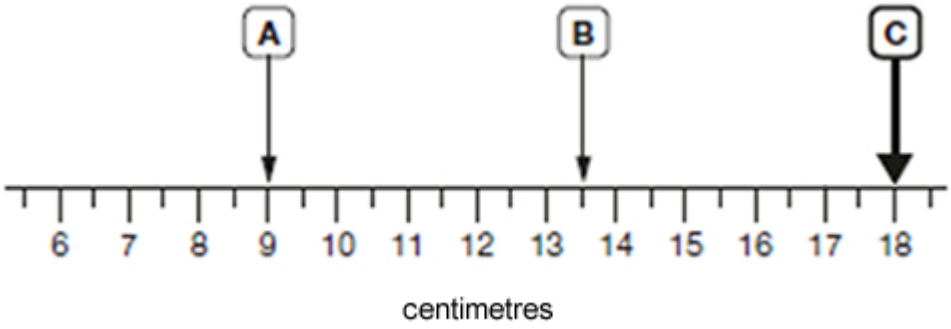
11. 10

[1]

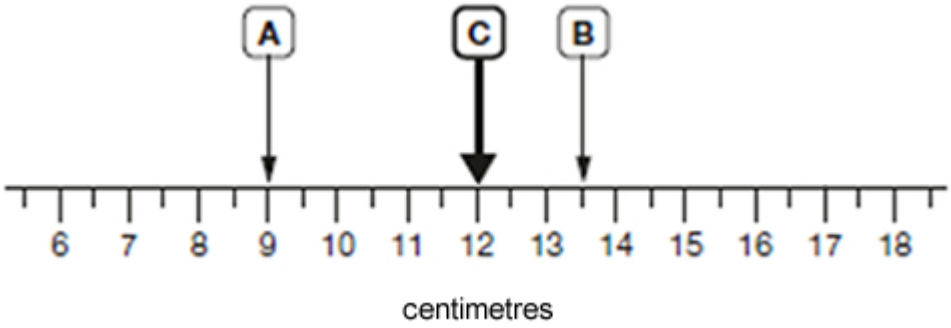
12. (a) $4\frac{1}{2}$ **OR** 4.5

1

(b) A point marked on the line at either 18 cm **OR** 12 cm, ie



OR



The mark need not touch the line provided the intention is clear.

The marked point need not be labelled.

U1

[2]

13. Award **TWO** marks for the correct answer of £2.70
*Accept £2.70p **OR** £2 70*

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg
45 × 6 = wrong answer

OR

40 × 6 = 240
5 × 6 = 30
240 + 30 = wrong answer

OR

Award **ONE** mark for £270 **OR** £270p **OR** £27.0 as evidence of appropriate working.
*An answer must be given for the award of **ONE** mark.*

Up to 2m

[2]

14. (a) Award **TWO** marks for the correct answer of £1.51

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

(b) $86 + (\frac{1}{2} \times 1.30)$

*Accept for **ONE** mark £151p **OR** £151 as evidence of an appropriate method.*
*Answer need not be obtained for the award of **ONE** mark.*

Up to 2

[2]

15. (a) 4

1

(b) 210

1

[2]

16. (a) 58

1

(b) 45

1

[2]

17. (a) 590 in the first box

1

(b) 710 in the last box

1

[2]

18. (a) 85

1

(b) 14

1

[2]

19. (a) 3

1

(b) 45

1

[2]

20. (a) 43

1

(b) Award **TWO** marks for the correct answer of 23

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

- 87 − 28 − 36 = wrong answer

OR

- 36 + 28 = 64

87 − 64 = wrong answer

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

Up to 2m

[3]

21. Award the mark for either calculation:

69	+	84	=	153	

OR

84	+	69	=	153	

[1]

22. 30 in left hand bottom box; 18 in left hand middle box; 100 in right hand box

***2 marks** for all three numbers correctly identified, or*
***1 mark** or any two numbers correctly identified.*

Up to 2

[2]

23. 18 (seashells)

[1]

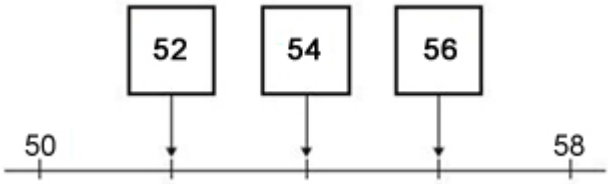
24. Number circled as shown:

50	75	(100)	125	150

Accept any other clear way of indicating the correct estimate, such as ticking the number.

[1]

25. All three numbers correct, as shown:



If the answer boxes are empty, accept the correct values written in the correct order elsewhere on the page.

[1]

26. One of the following triples:

50, 200, 250

50, 100, 350

150, 100, 250

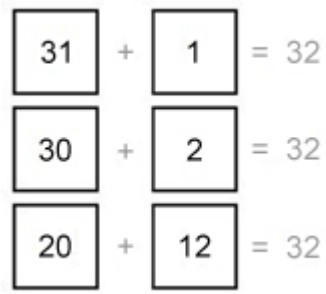
150, 200, 150

250, 100, 150

Accept: alternative unambiguous indications, eg numbers ticked, crossed or underlined

[1]

27. Award **TWO** marks for the three sums completed correctly using six different numbers, e.g.

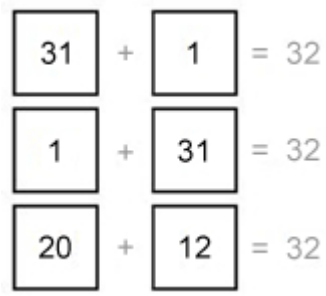


*All three sums must be correct for the award of **TWO** marks.*
Accept 0 + 32 as a correct answer.

2

or

Award **ONE** mark for any two sums completed correctly, such that all three calculations are correct but numbers are repeated in two of the calculations **or** there is an error in one of the calculations, e.g.



*Any two sums can be correct for the award of **ONE** mark.*

1

[2]

28. Award **two** marks for the correct answer of 22

If both marks are awarded, record by entering 1 in each marking space.

If the answer is incorrect, award **ONE** mark for evidence of appropriate method, eg
80 − 7 − 7 = 66
66 ÷ 3

*An answer need not be given for the award of **ONE** mark.*
*Award **ONE** mark by entering 1, 0 in the marking spaces.*

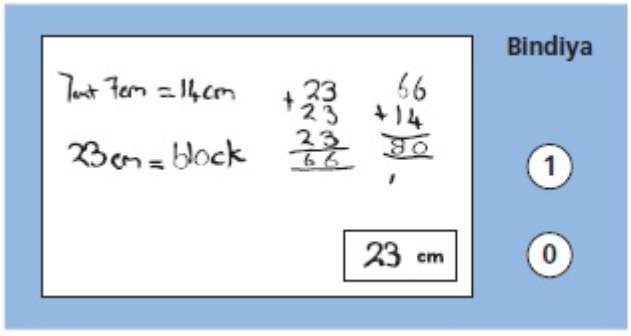
Up to 2m
U1

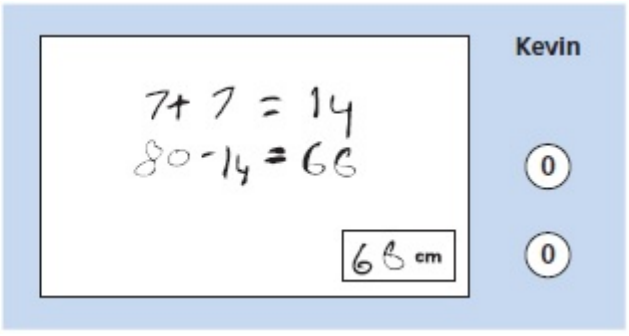
[2]

Example responses

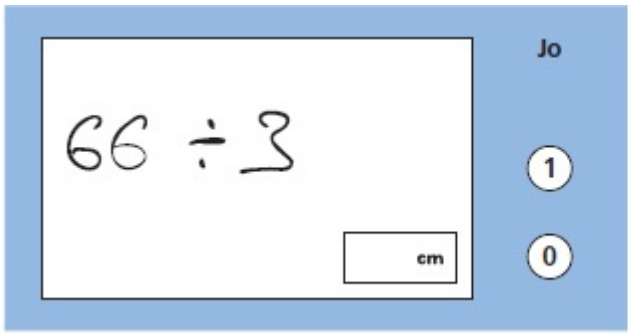
1 mark	0 marks

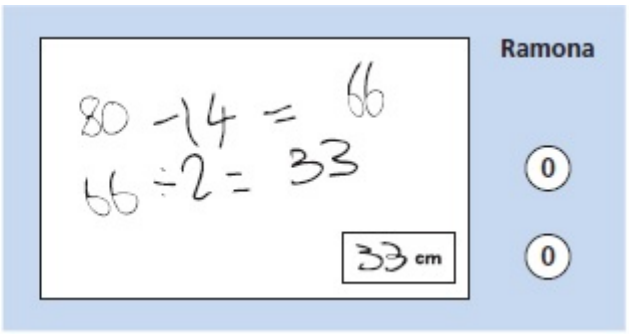
Bindiya and Kevin have both identifi ed the need to add together the length of the two gaps and then fi nd the difference between their answer and 80cm, the total length of the line. Bindiya continued her method to attempt to fi nd the length of a single block, but made an arithmetic error to reach an incorrect fi nal answer. Despite this error, she has used a complete and viable method, so can be awarded one mark. Unlike Bindiya, Kevin has not attempted to calculate the length of a single block. Therefore his method is not complete so he cannot be awarded one mark.





Jo has not recorded a method for fi nding the difference between 80 and two lots of seven, but we can assume that she did this since she recorded the correct answer 66 in her subsequent division. She has recorded the division 66 ÷ 3 to fi nd the length of a single block. Jo can be awarded one mark for recording a method that we can assume to be correct and complete; in the calculator-allowed test she is not required to give a final answer for the award of one mark. Ramona has also subtracted the length of the gaps from 80cm to give 66cm. However, she has then divided 66 by 2 instead of 3. She cannot be awarded one mark, since the final stage of her method is not correct.





29. (a) £2.70 **OR** 270p

*Accept £2.70p **OR** £2.70 pence **OR** £2-70 **OR** £2:70 **OR** £2 70 **OR** 2.70 **OR** 270*
***Do not** accept £270 **OR** £270p **OR** £2.7 **OR** 2.70p*

1

(b) Award **TWO** marks for the correct answer of 150g

If the answer is incorrect, award **ONE** mark for evidence of appropriate method, eg
80p for 100 grams
40p for 50 grams
10 + 50

OR

120 ÷ 80 = 1.5
1.5 × 100

OR

A 'trial and improvement' method, eg
80p for 100g
240p for 300g
160p for 200g

If both marks are awarded, record by entering 1 in each marking space.
*An answer need not be given for the award of **ONE** mark.*
*Award **ONE** mark by entering 1, 0 in the marking spaces.*
*A 'trial and improvement' method must show evidence of improvement, but a final answer need not be given for the award of **ONE** mark.*

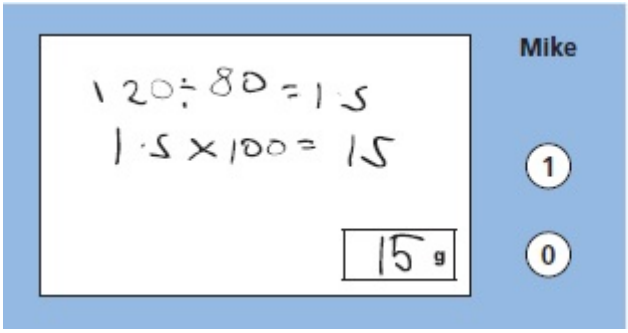
Up to 2m

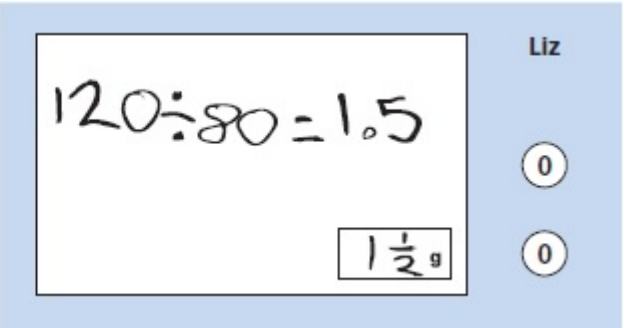
[3]

Example responses

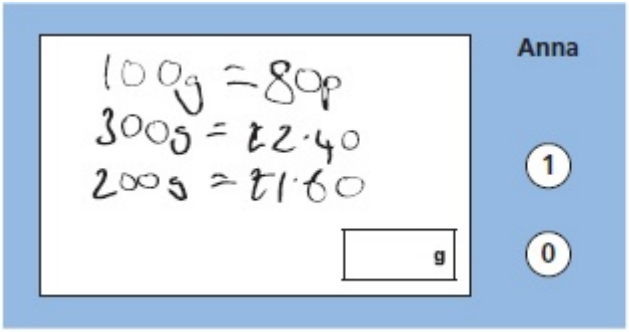
1 mark	0 marks

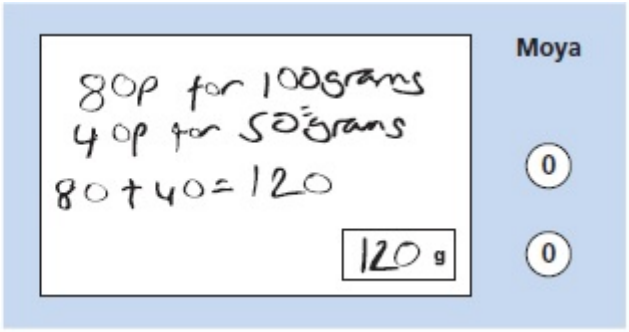
Both Mike and Liz have used a proportional method, dividing 120 by 80 to get an answer of 1.5. Mike has attempted to multiply his answer by 100. Therefore he can be awarded one mark for recording a complete and viable method. Liz stopped after the first stage in her method, failing to multiply her answer by 100. Her method is therefore incomplete and she cannot be awarded one mark.





Anna has used a trial and improvement method to answer this question. She has correctly calculated the cost for 300g of cherries and the cost for 200g of cherries. Her working records several stages, which demonstrates evidence of improvement. She can therefore be awarded one mark for a viable method, since a final answer is not needed for the award of one mark. Moya has shown that 80p would buy 100g of cherries, and therefore that 40p would buy 50g. However, rather than adding 100g and 50g, she incorrectly added 80p and 40p. She cannot be awarded one mark since the final step in her method was not appropriate to solve the problem.





30. One number circled as shown:

4 **(5)** 6 7 8

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

U1

[1]

31. Boxes completed as shown:

100 [=] 10 × 10

100 [>] 15 × 5

100 [<] 20 × 6

***All three** answers must be correct for the award of the mark.*

[1]

32. Boxes completed as shown:

There are [32] sweets in a bag.

[6] friends share them equally.

Each friend gets [5] sweets.

[2] sweets are left over.

OR

There are [32] sweets in a bag.

[5] friends share them equally.

Each friend gets [6] sweets.

[2] sweets are left over.

All four *boxes must be correct for the award of the mark.*

U1

[1]

33. 350

[1]

34. Award **TWO** marks for the correct answer of 25

If both marks are awarded, record by entering 1 in each marking space.

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:
23 + 30 = 53
78 - 53 = wrong answer

*The working must be carried through to reach an answer for the award of **ONE** mark.*
*Award **ONE** mark by entering 1, 0 in the marking spaces.*

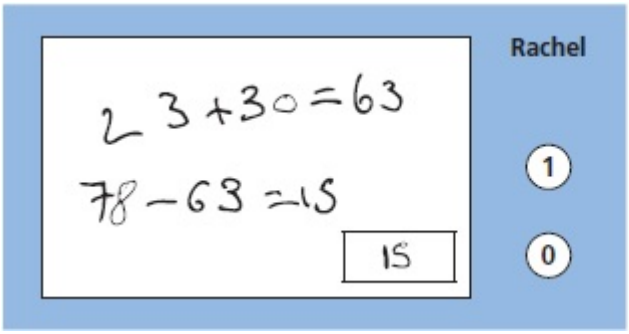
Up to 2m

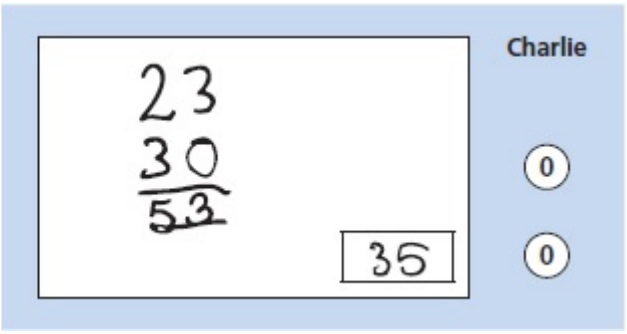
[2]

Example responses

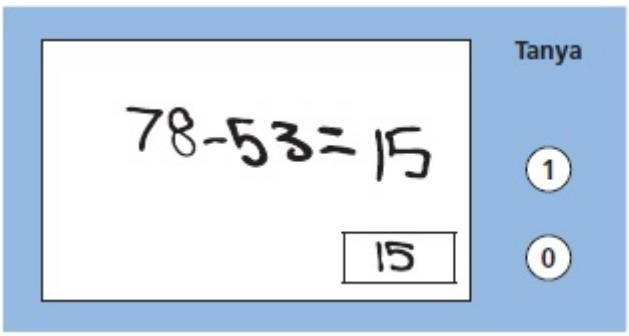
1 mark	0 marks

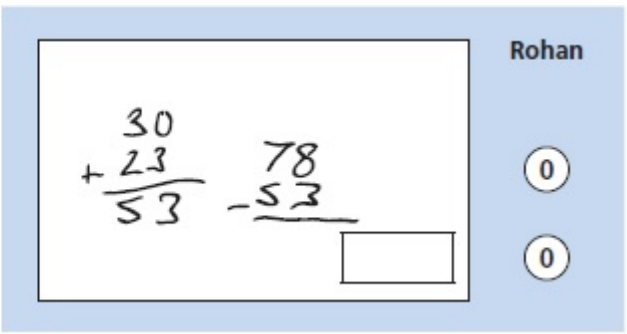
Rachel has identifi ed that she needs to add together the number of children in Class 1 and Class 2, and then subtract her answer from the total number of children in the school. Although she made an arithmetic error in the fi rst of these calculations, she has recorded a complete and correct method so can be awarded one mark. Charlie has also added together the number of children in Class 1 and Class 2. However, he has not recorded any further working. While it is possible that his answer of 35 was found by attempting to work out 78 – 53, this cannot be assumed. Therefore his method is incomplete and cannot be awarded one mark.



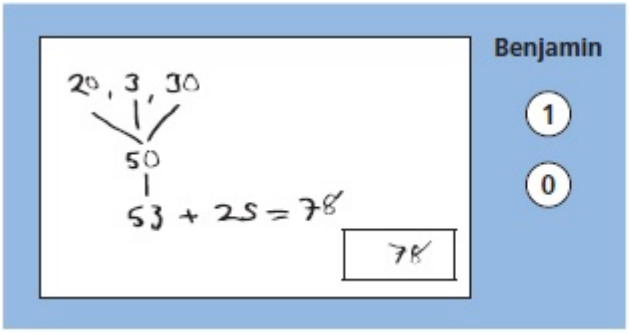


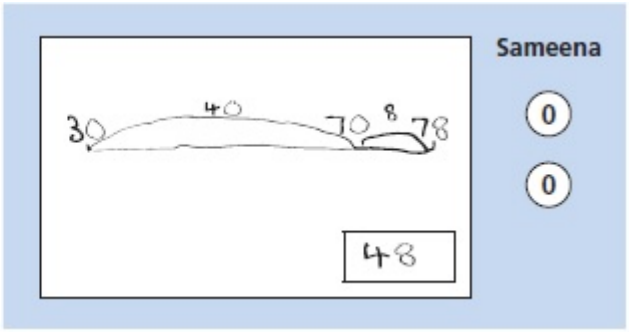
Tanya has not recorded the addition of 23 and 30, but we can assume that she has done this since she recorded the correct answer 53 in her subsequent subtraction. She made an arithmetic error when subtracting 53 from 78, and reached an incorrect fi nal answer. However, she can be awarded one mark since we can assume from her working that she used a complete and viable method. Rohan has recorded a correct method. However, an answer is required for the award of the working mark in the non-calculator paper. Therefore, without an answer, Rohan cannot be awarded one mark.





Benjamin has recorded a complete and correct method, without any errors. However, he has copied the wrong number from his fi nal calculation into the answer box, resulting in an incorrect fi nal answer. While he cannot be awarded both marks for a correct answer, he can be awarded one mark for a complete and correct method. Sameena has used a number line to count up to 78. However, she failed to total the two classes fi rst, and instead counted up from 30, the number of children in Class 2. Therefore her working is not correct and she cannot be awarded one mark.





35. Boxes completed as shown:

All three *digits must be correct for the award of the mark.*

[1]

36. Award **TWO** marks for the correct answer of 7

If both marks are awarded, record by entering 1 in each marking space.

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:
3 × 12 = 36
50 - 36 = 14
14 ÷ 2 = wrong answer

*The working must be carried through to reach an answer for the award of **ONE** mark.*
*Award **ONE** mark by entering 1, 0 in the marking spaces.*

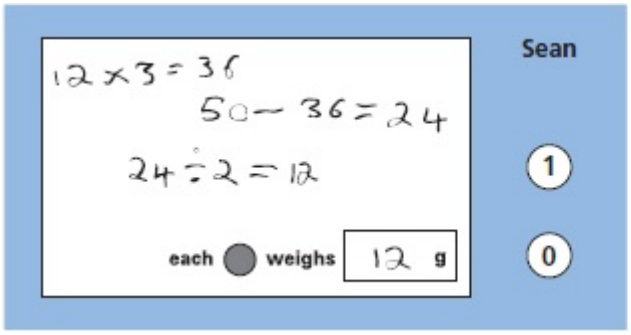
Up to 2m
U1

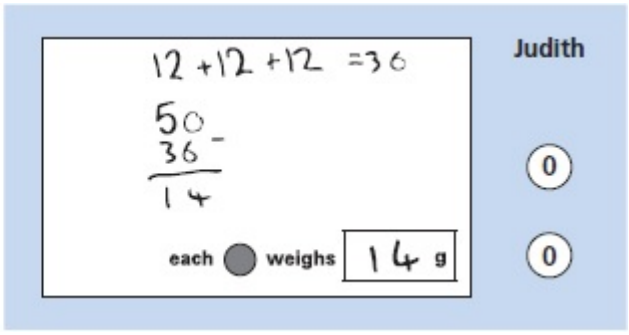
[2]

Example responses

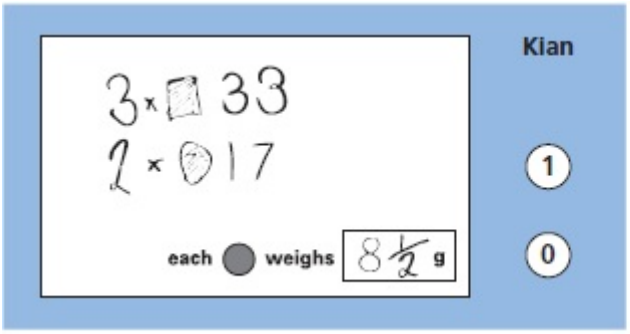
1 mark	0 marks

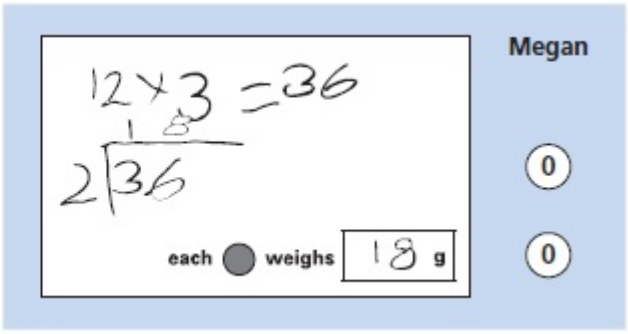
Sean has successfully managed to calculate the weight of the three square blocks. He subtracted his answer from 50g to find the weight of the two circular blocks, and then halved this answer to find the weight of one circular block. While he made an arithmetic error in completing the subtraction, his working is correct and complete and he can therefore be awarded one mark. Judith has carried out the fi rst two of these steps correctly, to calculate the total weight of the two circular blocks. However, she has not completed the problem by finding the weight of a single circular block. She therefore cannot be awarded one mark since her method is incomplete.





Kian attempted to work out the weight of three square blocks, but made an arithmetic error when doing this. We can assume that he used a mental method to fi nd the difference between his answer 33 and 50g, since his second multiplication includes the number 17. He then used a correct mental method to halve 17 to reach a final answer of 8½. Despite the arithmetic error in the fi rst stage of his method, it can be assumed that he used a complete and viable method. Kian can be awarded one mark. Megan has also worked out the weight of the three square blocks. However, she has failed to find the difference between this answer and 50, instead halving her answer of 36. Her method is not correct, so she cannot be awarded one mark.





37. 22

Accept –22

[1]

38. Award **TWO** marks for the correct answer of £1.15p **OR** 115 pence.

*Accept £1.15p **OR** £1.15 pence **OR** £1-15 **OR** £1:15 **OR** £1 15 **OR** 115 **OR** 1.15*
If both marks are awarded, record by entering 1 in each marking space.

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg:
£5 - 40p = £4.60
£4.60 ÷ 4 = wrong answer

*Accept for **ONE** mark £115p **OR** £115 **OR** £1.15p **OR** £11.50p **OR** £11.50 as evidence of appropriate working.*

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

*Award **ONE** mark by entering 1, 0 in the marking spaces.*

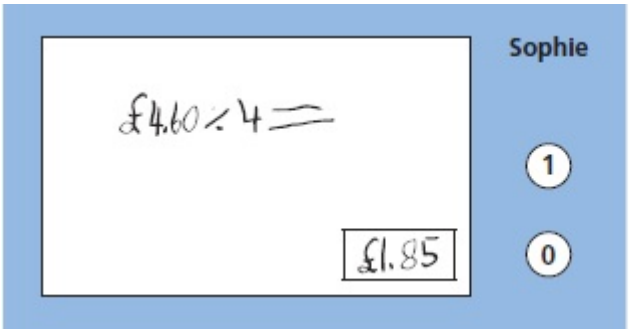
Up to 2m

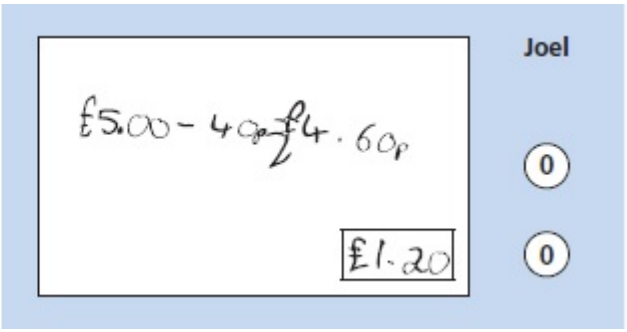
[2]

Example responses

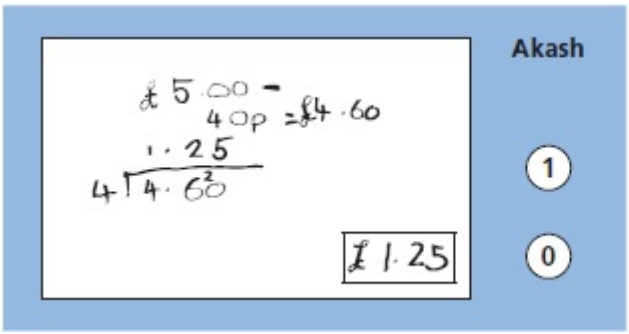
1 mark	0 marks

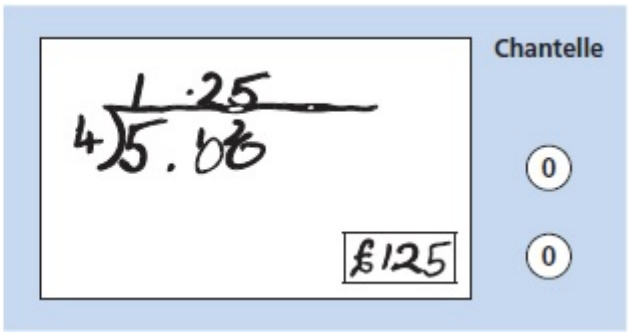
Sophie has not recorded how she found the difference between £5 and 40p. However, the presence of £4.60 in her written calculation is suffi cient evidence that she did this. She recorded the correct second stage of her method, but made an arithmetic error to reach an incorrect fi nal answer. Despite this error, she can be awarded one mark since we can assume that she used a complete and viable method. Joel subtracted 40p from £5.00 to give £4.60. However, he failed to record any more working. While it is quite possible that his answer of £1.20 was the result of attempting to divide £4.60 by four, this cannot be assumed. Joel cannot be awarded one mark since we cannot assume that his method was either complete or viable.





Akash correctly recorded both of the stages required for a correct method. However, he made an arithmetic error when completing the second stage and reached an incorrect fi nal answer. Despite this error, his working is complete and correct, so he can be awarded one mark.
Chantelle failed to carry out the fi rst step in the calculation, instead dividing £5.00 by 4. She cannot be awarded one mark as her working is incorrect.





39. Three numbers circled as shown:

11 (17) (25) 34 40 (49)

All three *numbers must be correct for the award of the mark.*

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

[1]

40. Answer boxes completed as shown:

| 5 | 5 | × | 2 | 0 |

OR

| 5 | 0 | × | 2 | 2 |

OR

| 4 | 4 | × | 2 | 5 |

Accept numbers written in either order.
Do not *accept an answer that includes a 3-digit number.*

[1]