

2018 national curriculum tests

Key stage 2

MATHEMATICS

Modified large print

Paper 1: arithmetic

First name _____

Middle name _____

Last name _____

Date of birth **Day** _____ **Month** _____ **Year** _____

School name _____

DfE number _____

Note to markers:

This paper should be marked using the standard mark schemes for KS2 Mathematics: Paper 1. There is additional guidance on marking some questions in this paper in the Key stage 2 Mathematics amendments to mark schemes – MLP document.

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Instructions

You must not use a calculator to answer any questions in this test.

Questions and answers

You will have 30 minutes to complete this test, plus your additional time allowance.

Work as quickly and as carefully as you can.

Put your answer on the line or in the box for each question.

All answers should be given as a single value.

For questions expressed as common fractions or mixed numbers, you should give your answers as common fractions or mixed numbers.

If you cannot do a question, go on to the next one. You can come back to it later, if you have time.

If you finish before the end, go back and check your work.

Marks

In this test, long division and long multiplication questions are worth two marks each. You will be awarded two marks for a correct answer. You may get one mark for showing your method.

All other questions are worth one mark each.

1. $39 + 673 =$ _____

2. $\frac{9}{11} - \frac{4}{11} =$ _____

3. $2 \times 45 =$ _____

4. $838 \div 1 =$ _____

5. $99 \div 11 =$ _____

6. $5 \times 4 \times 10 =$ _____

7. $7\,064 - 502 =$ _____

8. $6^2 + 10 =$ _____

9. $56 \cdot 38 + 24 \cdot 7 =$ _____

10. $- 10 = 298$

11. $270 \div 3 =$ _____

12. $5\,400 \div 9 =$ _____

13. $60 \div 15 =$ _____

14. $= 5\,776 - 855$

15. $3\,050\,020 = 3\,000\,000 +$ $+ 20$

16. $10 - 5 \cdot 4 =$ _____

17. $\frac{5}{7} + \frac{3}{21} =$ _____

18. $0.1 \div 100 =$ _____

19. $\frac{3}{4}$ of 1 000 = _____

20. Work out 785×23

Show your method.

21. 20% of 1 200 = _____

22. Work out $645 \div 43$

Show your method.

23. $0.5 \times 28 =$ _____

24. $\frac{1}{2} + \frac{1}{5} =$ _____

25. $1\frac{3}{4} + \frac{3}{4} =$ _____

26. $6 - 5.738 =$ _____

27. $3.9 \times 30 =$ _____

28. $1\frac{1}{15} - \frac{2}{5} =$ _____

29. Work out $5\,413 \times 86$

Show your method.

30. 99% of $200 =$ _____

31. $\frac{1}{4} \div 2 =$ _____

32. $9^2 - 36 \div 9 =$ _____

33. $1\frac{1}{2} \times 40 =$ _____

34. 28% of 650 = _____

35. $4\frac{2}{3} - 1\frac{6}{7} =$ _____

36. Work out $8\,827 \div 97$

Show your method.

END OF TEST



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2018 key stage 2 mathematics

Paper 1: arithmetic

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2018 national curriculum tests

Key stage 2

Mathematics

Administering the modified large print (MLP)
version of Paper 1: arithmetic

WEDNESDAY 16 MAY 2018

CONFIDENTIAL: This pack must be kept secure and unopened until the start of the test on **Wednesday 16 May**.

Early opening, up to 1 hour before the test starts, is only allowed if access to the contents is needed to make adaptations to meet individual pupils' needs. Early opening of more than 1 hour is only allowed if permission has been granted by STA.

Please ensure you have read and understood the 2018 modified test administration guidance before opening this pack.

Pack contents:

- Administration instructions for the MLP key stage 2 mathematics test Paper 1: arithmetic (overleaf)
- 1 copy of the MLP Paper 1: arithmetic

For test administration



Standards
& Testing
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2018 Key stage 2 mathematics test

The following information explains how to administer the modified large print (MLP) version of the key stage 2 mathematics test Paper 1: arithmetic. Modified test administration guidance is available at www.gov.uk/sta. If you have any questions, you should check with your headteacher or key stage 2 test co-ordinator before you administer the test.

Please follow these instructions correctly to ensure the test is properly administered. Failure to administer the test correctly could result in a maladministration investigation.

Format

The key stage 2 mathematics test consists of 3 papers. The papers must be administered in order. Pupils can have a break between Paper 1 and Paper 2. Test packs for each test must not be opened until the pupils are in the test room ready to complete the test, unless early opening is required to meet individual pupils' needs.

The scheduled day for the administration of Papers 1 and 2 is Wednesday 16 May. The scheduled day for the administration of Paper 3 is Thursday 17 May.

Paper 1: arithmetic consists of a single MLP test paper.

Pupils have 30 minutes to complete the paper, plus up to 100% additional time. You must not refer to the standard test questions when administering this test.

Equipment

Each pupil will need the equipment specified below:

- a blue/black pen or dark pencil
- ruler.

Rubbers are allowed, but please encourage pupils to cross out answers they wish to change instead of rubbing them out.

Pupils **are not** allowed:

- calculators
- tracing paper
- other mathematical equipment, such as angle measurers or mirrors.

Assistance

You must ensure that nothing you say or do during the test could be interpreted as giving pupils an advantage, e.g. indicating an answer is correct or incorrect, or suggesting the pupil looks at an answer again.

If a pupil requests it, you may read a question to the pupil on a one-to-one basis. If reading to a pupil, you may only read words and numbers, but not mathematical symbols. This is to ensure that pupils are not given an unfair advantage by having the function inadvertently explained by reading its name. The example below illustrates how to deal with a common situation:

- Q.** Do I need to multiply when I calculate 95% of 240?
- A.** I can't tell you, but think hard and try to remember. We can talk about it after the test.

Guidance for specific questions

There is no specific guidance needed to administer the MLP version of Paper 1: arithmetic.

Before the test begins

Review the list of pupils with any particular individual needs, e.g. pupils who may need a rest break, a scribe or a transcript made at the end of the test.

Ensure you know how to administer any access arrangements correctly. Please refer to the 2018 key stage 2 access arrangements guidance.

It is important that the pupils' names on their tests match the names on the test attendance register. Check with your test co-ordinator whether any pupil in your group is known by a different name in school, or has changed their name since pupil registration. This is so you can ensure the pupil writes the correct name on their test paper.

Check there are enough test administrators to maintain adequate supervision during the test. You should consider the possibility that at least one test administrator might need to leave the room with a pupil.

Ensure that you understand how to deal with issues during the tests.

Write the school's name and DfE number on a board that is visible to all pupils. Leave space on the board to write the start and finish times of the test.

What to do at the start of the test

Check that seating is appropriately spaced and that no pupil can see another pupil's test paper.

Check that pupils don't have mobile phones or other disruptive items.

Check that pupils don't have any materials or equipment that may give them extra help.

Ensure each pupil who needs it has 1 MLP copy of mathematics Paper 1: arithmetic.

Write the start and finish times on a board so that all the pupils can see them.

How to introduce the test

It is important to brief pupils fully at the start of each test. Use this script to introduce mathematics Paper 1: arithmetic.

This is the key stage 2 mathematics Paper 1: arithmetic.

You will need a blue or black pen or dark pencil.

Write your name, school name and DfE number on the front of your test Paper 1: arithmetic.

[If any pupils' name differs from the name provided during pupil registration, instruct the pupil to write both names on the paper.]

Open your test paper to page 3. I will read the instructions to you.

*You must **not** use a calculator to answer any questions in this test.*

You will have up to 60 minutes to complete this test. This includes your additional time allowance.

Work as quickly and as carefully as you can.

Put your answer on the line or in the box for each question.

All answers should be given as a single value.

For questions expressed as common fractions or mixed numbers, you should give your answers as common fractions or mixed numbers.

If you cannot do a question, go on to the next one. You can come back to it later, if you have time.

If you finish before the end, go back and check your work.

*In this test, long division and long multiplication questions are worth **2 marks** each. You will be awarded 2 marks for a correct answer. You may get 1 mark for showing your method.*

*All other questions are worth **1 mark** each.*

If you want to change your answer, put a line through the response you don't want the marker to read. If you have to use a rubber, make sure you rub out your answer completely before writing a new one.

Remember to check your work carefully.

If you have any questions during the test, you should put your hand up and wait for someone to come to you. Remember, I can't help you answer any of the test questions.

You must not talk to each other.

Do you have any questions?

I will tell you when you have 5 minutes left. I will tell you when the test is over and to stop writing.

You may now start the test.

How to deal with issues during the test

It is impossible to plan for every scenario. Whatever action you take, pupil safety must always be your first consideration.

In the following circumstances, you will need to stop the test either for an individual pupil, a group of pupils or for the whole cohort:

- test papers are incorrectly collated or the print is illegible
- an incorrect test has been administered
- a fire alarm goes off
- a pupil is unwell
- a pupil needs to leave the room
- a pupil is caught cheating.

If you need to stop the test:

- make a note of the time
- make sure pupils are kept under test conditions and that they are supervised
- if pupils have to leave the room, ensure they do not talk about the test
- speak to your test co-ordinator or a senior member of staff for advice on what to do next
- consider contacting the national curriculum assessments helpline on 0300 303 3013 for further advice.

You should brief your headteacher on how the incident was dealt with, once the test is over.

What to do at the end of the test

If you need to make a transcript of a test script, complete it with the individual pupil at the end of the test, under test conditions. Particular care should be taken to ensure accurate transcriptions are made and the pupil's answers are not corrected or amended.

Ensure you inform your senior member of staff/test co-ordinator if you have made a transcript, or if a pupil has used a scribe, word processor or other electronic or technical device. This is so they can complete the appropriate online notification.

Make sure you have collected every test script. Return them immediately to the senior member of staff who is responsible for collating the tests.

Do not look at, review or amend pupils' answers in any way (unless it is necessary to make a transcript). If you tamper with or make changes to pupils' answers, it will be considered maladministration and results could be annulled.

Do not keep or photocopy test scripts for any reason.

All test materials, including any unused test papers, must be stored securely until Friday 25 May.

2018 national curriculum tests

Key stage 2

MATHEMATICS

Modified large print

Paper 2: reasoning

First name _____

Middle name _____

Last name _____

Date of birth **Day** _____ **Month** _____ **Year** _____

School name _____

DfE number _____

Note to markers:

This paper should be marked using the modified large print amendments to the mark schemes – MLP with the standard mark schemes for KS2 Mathematics: Paper 2.

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Instructions

You must not use a calculator to answer any questions in this test.

Questions and answers

You will have 40 minutes to complete this test, plus your additional time allowance.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use any space on the page.

Some questions say, 'Show your method'.

For these questions you may get a mark for showing your method.

If you cannot do a question, go on to the next one.

You can come back to it later, if you have time.

If you finish before the end, go back and check your work.

1. Stefan completes the calculation below.

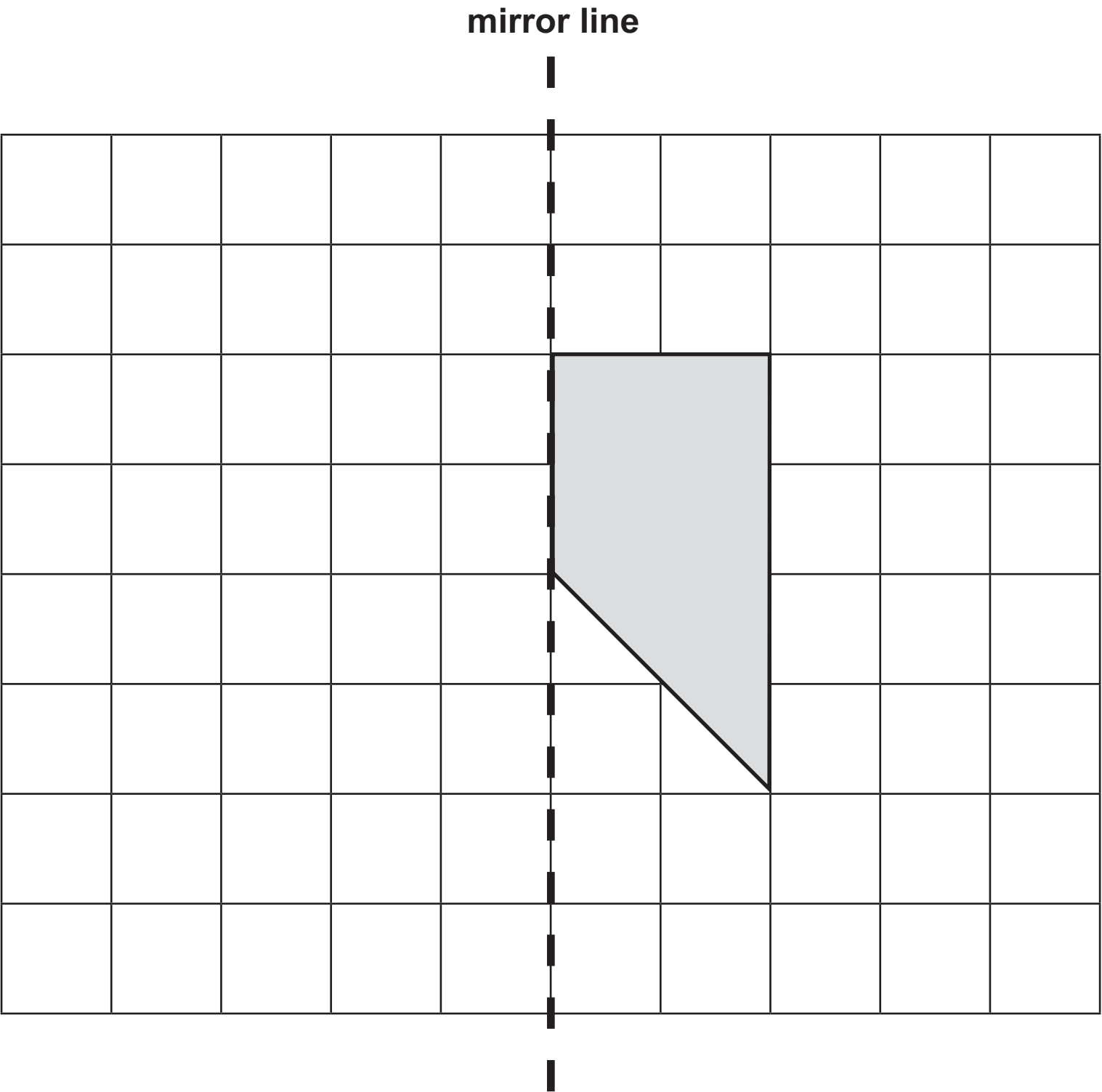
$$95 - 67 = 28$$

Write an addition calculation he could use to check his answer.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

2. You have a shape for this question.

Look at the shape on the grid below.



Complete the design so that it is symmetrical about the mirror line.

Use a ruler.

3. You have a separate copy of the diagram.

On the line below, mark the point that is **6.5** centimetres from **A**



4. a) $\frac{3}{4} = \frac{9}{\boxed{}}$

Write the missing number in the box.

b) $\frac{3}{4} = \frac{\boxed{}}{24}$

Write the missing number in the box.

5. The table below shows the temperatures in four cities at midnight and at midday.

City	At midnight	At midday
Paris	-4°C	-2°C
Oslo	-13°C	-7°C
Rome	3°C	10°C
Warsaw	-6°C	2°C

At midnight, how many degrees colder was Paris than Rome?

_____ degrees

Which city was **6** degrees colder at midnight than at midday?

6. Look at the sequence below.

303 604 302 604 301 604 300 604 _____

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

What is the next number in the sequence?

7. Look at the five numbers below.

$$0.25$$

$$0.75$$

$$\frac{25}{100}$$

$$0.5$$

$$\frac{2}{5}$$

Tick the two numbers that are equivalent to $\frac{1}{4}$

8. Ken buys **3** large boxes and **2** small boxes of chocolates.

Each large box has **48** chocolates.

Each small box has **24** chocolates.

How many chocolates did Ken buy altogether?

Show your method.

_____ chocolates

9. The list below shows the years in which the Cricket World Cup was held since **1992**

1992 1996 1999 2003 2007 2011 2015

Adam says that the Cricket World Cup has been held every four years since **1992**

Adam is not correct.

Explain how you know.

10. Look at the three symbols below.

$>$ $=$ $<$

Write the correct symbol in each box below to make the four statements correct.

$$11 \times 12 \quad \square \quad 15 \times 10$$

$$90 \div 30 \quad \square \quad 60 \div 20$$

$$120 \div 4 \quad \square \quad 160 \div 8$$

$$30 \times 8 \quad \square \quad 100 \times 10$$

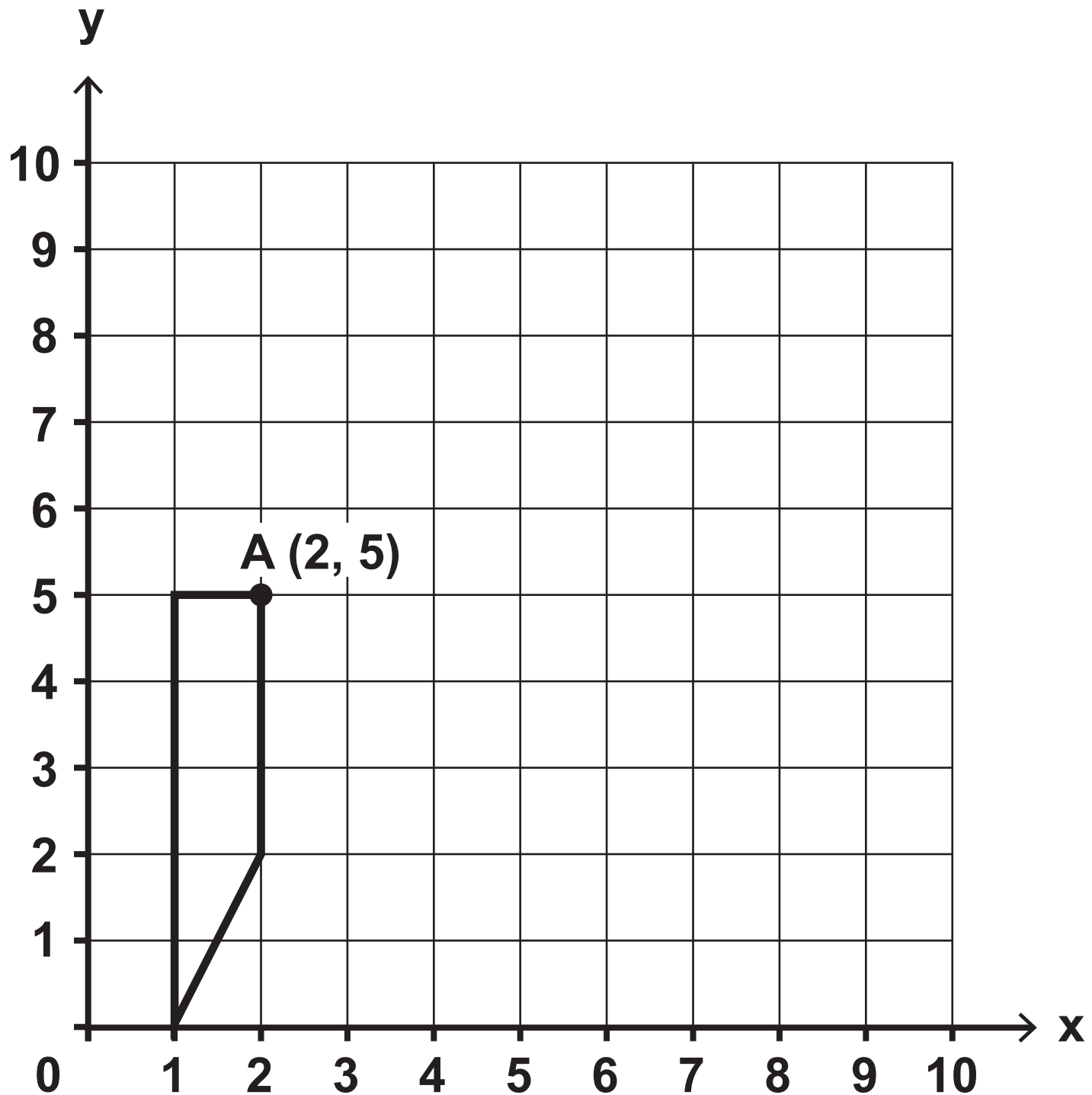
11. You have a model of a **3-D** shape for this question.

How many faces does it have?

How many vertices does it have?

How many edges does it have?

12. Look at the shape on the grid below.



A is the point **(2, 5)**

The shape is translated so that point **A** moves to **(6, 8)**

Draw the shape in its new position.

Use a ruler.

13. Look at the five improper fractions below.

$$\frac{67}{8}$$

$$\frac{48}{8}$$

$$\frac{62}{8}$$

$$\frac{55}{8}$$

$$\frac{76}{8}$$

Tick the fraction that is equivalent to $6\frac{7}{8}$

14. Look at the three fractions below.

$$\frac{6}{5} \quad \frac{3}{5} \quad \frac{3}{4}$$

Write these fractions in order, starting with the smallest.

smallest

15. A box contains trays of melons.

There are 15 melons in a tray.

There are 3 trays in a box.

A supermarket sells 40 boxes of melons.

How many melons does the supermarket sell?

Show your method.

_____ melons

16. Adam wants to use a mental method to calculate $182 - 97$

He starts from **182**

Four methods that Adam could use are shown below.

add **3** then subtract **90**

☐

subtract **100** then add **3**

☐

subtract **7** then subtract **90**

☐

subtract **3** then subtract **100**

☐

Tick the methods that are correct.

17. There are **28** pupils in a class.

The teacher has **8** litres of orange juice.

She pours **225** millilitres of orange juice for every pupil.

How much orange juice is left over?

Show your method.

18. Last year, Jacob went to four concerts.

Three of his tickets cost £5 each.

The other ticket cost £7

What was the mean cost of the tickets?

Show your method.

£ _____

19. Layla wants to estimate the answer to the calculation below.

$$3\frac{9}{10} - 2\frac{1}{8} + 1\frac{4}{5}$$

Tick the calculation below that is the best estimate.

Tick one.

$3 - 2 + 2$ ☐

$4 - 2 + 1$ ☐

$4 - 2 + 2$ ☐

$3 - 2 + 1$ ☐

**20. The length of an alligator can be estimated by
measuring the distance from its eyes to its nose
then multiplying that distance by 12**

The distance from eyes to nose for one alligator is 17.5 cm

The distance from eyes to nose for another alligator is 15 cm

**What is the difference in the estimated lengths of these
two alligators?**

Show your method.

_____ **cm**

21. In this question

 and  stand for two different numbers.

$$2 \triangle + 3 \bigcirc = 147$$

$$\triangle + 3 \bigcirc = 111$$

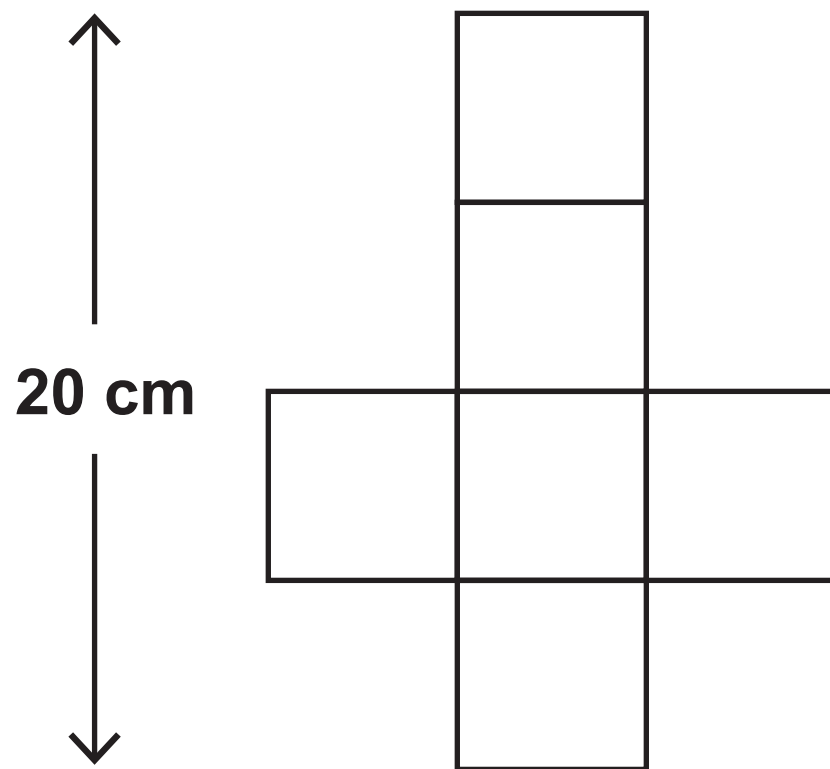
Calculate the value of each shape.

$$\triangle = \underline{\hspace{2cm}}$$

$$\bigcirc = \underline{\hspace{2cm}}$$

22. Look at the diagram below.

It is not actual size.



The diagram shows the net of a cube.

What is the volume of the cube?

_____ **cm³**

23. The length of a day on Earth is **24** hours.

The length of a day on Mercury is **$58\frac{2}{3}$** times the length of a day on Earth.

What is the length of a day on Mercury, in hours?

Show your method.

_____ hours

END OF TEST



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2018 key stage 2 mathematics

Paper 2: reasoning

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Copy of diagram for question 3



2018 national curriculum tests

Key stage 2

Mathematics

Administering the modified large print (MLP)
version of Paper 2: reasoning

WEDNESDAY 16 MAY 2018

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Pack contents:

- Administration instructions for the MLP key stage 2 mathematics test Paper 2: reasoning (overleaf)
- 1 copy of the MLP Paper 2: reasoning
- 1 model pack

For test administration



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2018 Key stage 2 mathematics test

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Please follow these instructions correctly to ensure the test is properly administered. Failure to administer the test correctly could result in a maladministration investigation.

Format

The key stage 2 mathematics test consists of 3 papers. The papers must be administered in order. Pupils can have a break between Paper 1 and Paper 2. Test packs for each test must not be opened until the pupils are in the test room ready to complete the test, unless early opening is required to meet individual pupils’ needs.

The scheduled day for the administration of Papers 1 and 2 is Wednesday 16 May.

The scheduled day for the administration of Paper 3 is Thursday 17 May.

Paper 2: reasoning consists of a single MLP test paper.

Pupils will have 40 minutes, plus up to 100% additional time, to complete the test paper.

You must not refer to the standard test questions when administering this test.

Equipment

Each pupil will need the equipment specified below:

- a blue/black pen or dark pencil
- a sharp, dark pencil for mathematical drawing
- a ruler (showing centimetres)
- an angle measurer or protractor (Papers 2 and 3 only)
- a mirror (Papers 2 and 3 only)

Rubbers are allowed, but please encourage pupils to cross out answers they wish to change instead of rubbing them out.

Pupils may use the following equipment, if this is normal classroom practice:

- monolingual English electronic spell checkers
- bilingual word lists
- bilingual dictionaries or electronic translators, provided they only give word-for-word translations.

Pupils are **not** allowed:

- calculators
- tracing paper.

Assistance

You must ensure nothing you say or do during a test could be interpreted as giving pupils an advantage, e.g. indicating an answer is correct or incorrect, or suggesting the pupil looks at an answer again.

If a pupil requests it, you may read a question to the pupil on a one-to-one basis.

If reading to a pupil, you may only read words and numbers, but not mathematical symbols. This is to ensure pupils are not given an unfair advantage by having the function inadvertently explained by reading its name.

At a pupil’s request, you may point to parts of the test paper such as charts, diagrams, statements and equations, but you must not explain the information or help the pupil by interpreting it.

The following examples illustrate how to deal with some common situations:

Q. What does ‘quadrilateral’ or ‘>’ or ‘<’ mean?

A. I can’t tell you, but think hard and try to remember. We can talk about it after the test.

Q. What is ‘0.6’?

A. That’s nought point six.

You must not explain any subject-specific terminology. If any context or words related to a question are unfamiliar to a pupil, you may show them related objects or pictures, or describe the context.

Guidance for specific questions

There is a shape supplied for **question 2** and a model supplied for **question 11**. Make sure that these are to hand for when the pupil reaches these questions.

There is a separate copy of the diagram attached to the test booklet for question 3. Remove it at the start of the test and secure it to the pupil’s test booklet, if used.

Before the test begins

Open the pack containing the shape and the model ready for use in questions 2 (shape) and 11 (model).

Review the list of pupils with any particular individual needs, e.g. pupils who may need a rest break, a scribe or a transcript made at the end of the test.

Ensure you know how to administer any access arrangements correctly. Please refer to the 2018 key stage 2 access arrangements guidance.

It is important that the pupils’ names on their tests match the names on the test attendance register. Check with your test co-ordinator whether any pupil in your group is known by a different name in school, or has changed their name since pupil registration. This is so you can ensure the pupil writes the correct name on their test paper.

Check there are enough test administrators to maintain adequate supervision for the test. You should consider the possibility that at least one test administrator might need to leave the room with a pupil.

Ensure that you understand how to deal with issues during the tests.

Write the school’s name and DfE number on a board that is visible to all pupils.

Leave space on the board to write the start and finish times of the test.

What to do at the start of the test

Check that seating is appropriately spaced and that no pupil can see another pupil’s test paper.

Check that pupils don’t have mobile phones or other disruptive items.

Check that pupils don’t have any materials or equipment that may give them extra help.

Ensure each pupil who needs it has 1 MLP copy of mathematics Paper 2: reasoning.

Write the start and finish times on a board so that all the pupils can see them.

How to introduce the test

It is important to brief pupils fully at the start of each test. Use this script to introduce mathematics Paper 2: reasoning.

This is the key stage 2 mathematics Paper 2: reasoning.

You will need a blue or black pen, a sharp, dark pencil, a ruler, a protractor and a mirror.

Write your name, school name and DfE number on the front of your mathematics test Paper 2: reasoning.

[If any pupil’s name differs from the name provided during pupil registration, instruct the pupil to write both names on the paper.]

Open your test paper to page 3. I will read the instructions to you.

*You must **not** use a calculator to answer any questions in this test.*

You have up to 80 minutes to complete the test. This includes your additional time allowance.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use any space on the page.

Some questions say ‘Show your method’. For these questions you may get a mark for showing your method.

If you cannot do a question, go on to the next one. You can come back to it later, if you have time.

If you finish before the end, go back and check your work.

If you want to change your answer, put a line through the answer you don’t want the marker to read.

If you want to change a drawing, you should either put a line through the answer you don’t want the marker to read, or use a rubber.

If you have to use a rubber, make sure you rub out your answer completely before writing a new one.

Remember to check your work carefully.

If you have any questions during the test, you should put your hand up and wait for someone to come to you. Remember, I can’t help you answer any of the test questions.

You must not talk to each other.

Do you have any questions?

I will tell you when you have 5 minutes left. I will tell you when the test is over and to stop writing.

You may now start the test.

How to deal with issues during the test

It is impossible to plan for every scenario. Whatever action you take, pupil safety must always be your first consideration.

In the following circumstances, you will need to stop the test either for an individual pupil, a group of pupils or for the whole cohort:

- test papers are incorrectly collated or the print is illegible
- an incorrect test has been administered
- a fire alarm goes off
- a pupil is unwell
- a pupil needs to leave the room
- a pupil is caught cheating.

If you need to stop the test:

- make a note of the time
- make sure the pupils are kept under test conditions and that they are supervised
- if the pupils have to leave the room, ensure they do not talk about the test
- speak to your test co-ordinator or a senior member of staff for advice on what to do next
- consider contacting the national curriculum assessments helpline on 0300 303 3013 for further advice.

You should brief your headteacher on how the incident was dealt with, once the test is over.

What to do at the end of the test

If you need to make a transcript of a test script, complete it with the individual pupil at the end of the test, under test conditions. Particular care should be taken to ensure accurate transcriptions are made and the pupil’s answers are not corrected or amended.

Ensure you inform your senior member of staff/test co-ordinator if you have made a transcript, or if a pupil has used a scribe, word processor or other electronic or technical device. This is so they can complete the appropriate online notification.

Make sure you have collected every test script. Return them immediately to the senior member of staff who is responsible for collating the tests.

Do not look at, review or amend pupils’ answers in any way (unless it is necessary to make a transcript). If you tamper with or make changes to pupils’ answers, it will be considered maladministration and results could be annulled.

Do not keep or photocopy test scripts for any reason.

All test materials, including any unused test papers, must be stored securely until Friday 25 May.

2018 national curriculum tests

Key stage 2

MATHEMATICS

Modified large print

Paper 3: reasoning

First name _____

Middle name _____

Last name _____

Date of birth **Day** _____ **Month** _____ **Year** _____

School name _____

DfE number _____

Note to markers:

This paper should be marked using the modified large print amendments to the mark schemes – MLP with the standard mark schemes for KS2 Mathematics: Paper 3.

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Instructions

You must not use a calculator to answer any questions in this test.

Questions and answers

You will have 40 minutes to complete this test, plus your additional time allowance.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use any space on the page.

Some questions say, 'Show your method'.

For these questions you may get a mark for showing your method.

If you cannot do a question, go on to the next one.

You can come back to it later, if you have time.

If you finish before the end, go back and check your work.

1. Look at the sequence below.

_____ 42 49 _____ 63 _____

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

Write the missing numbers in the spaces.

2. Adam chooses the colours for a new team shirt.

The shirt has two colours.

There are four colours to choose from: yellow, blue, white and red.

There are six different combinations.

The shirt could be

yellow and blue

yellow and white

yellow and red

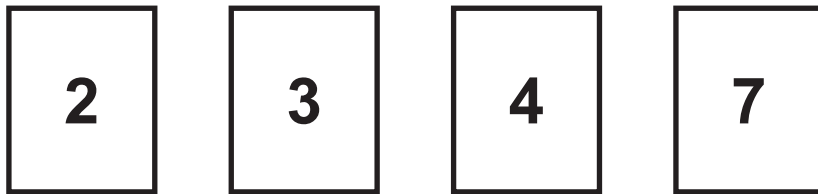
blue and white.

Write the other two combinations.

_____ and _____

_____ and _____

3. Look at the four number cards below.



Layla uses each card once to make a four-digit number.

She places

4 in the tens column

2 so that it has a higher value than any of the other digits.

She places the remaining two digits so that **7** has the higher value.

Write a digit in each box below to show Layla's number.

--	--	--	--

4. The numbers **532_** and **_069** both have four digits.

Look at the addition below.

$$532_ + 748 = _069$$

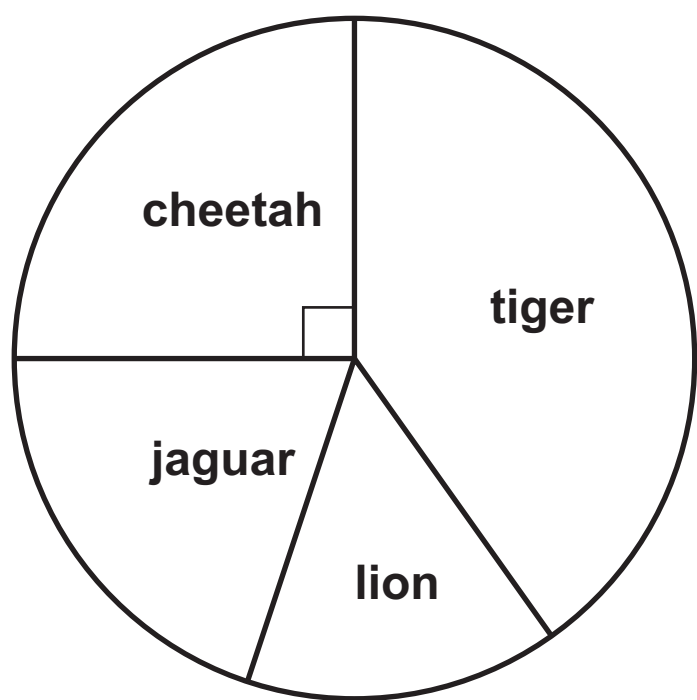
Write the missing digit on each line to make this addition correct.

5. Look at the five numbers below.

2 3 6 9 12

Write the numbers that are common factors of both **12** and **18**

6. The chart below shows the number of different types of big cat in a zoo.



There are **20** big cats in the zoo altogether.

Look at the four statements about the chart, below.

There are more cheetahs than jaguars.

☐

The total number of lions and tigers is **10**

☐

One-quarter of the big cats are cheetahs.

☐

There are more than **5** jaguars.

☐

Tick the statements that are true.

7. A farmer is packing eggs.

Each box holds six eggs.

The farmer has **980** eggs to pack.

How many boxes can the farmer fill using **980** eggs?

_____ full boxes

How many eggs will be left over?

_____ left over

8. Jack has **£400**

He spends **35%** of his money on a new bike.

How much does Jack spend on his new bike?

£ _____

9. The Angel of the North is a large statue in England.

It is **20** metres tall and **54** metres wide.

Ally makes a scale model of the Angel of the North.

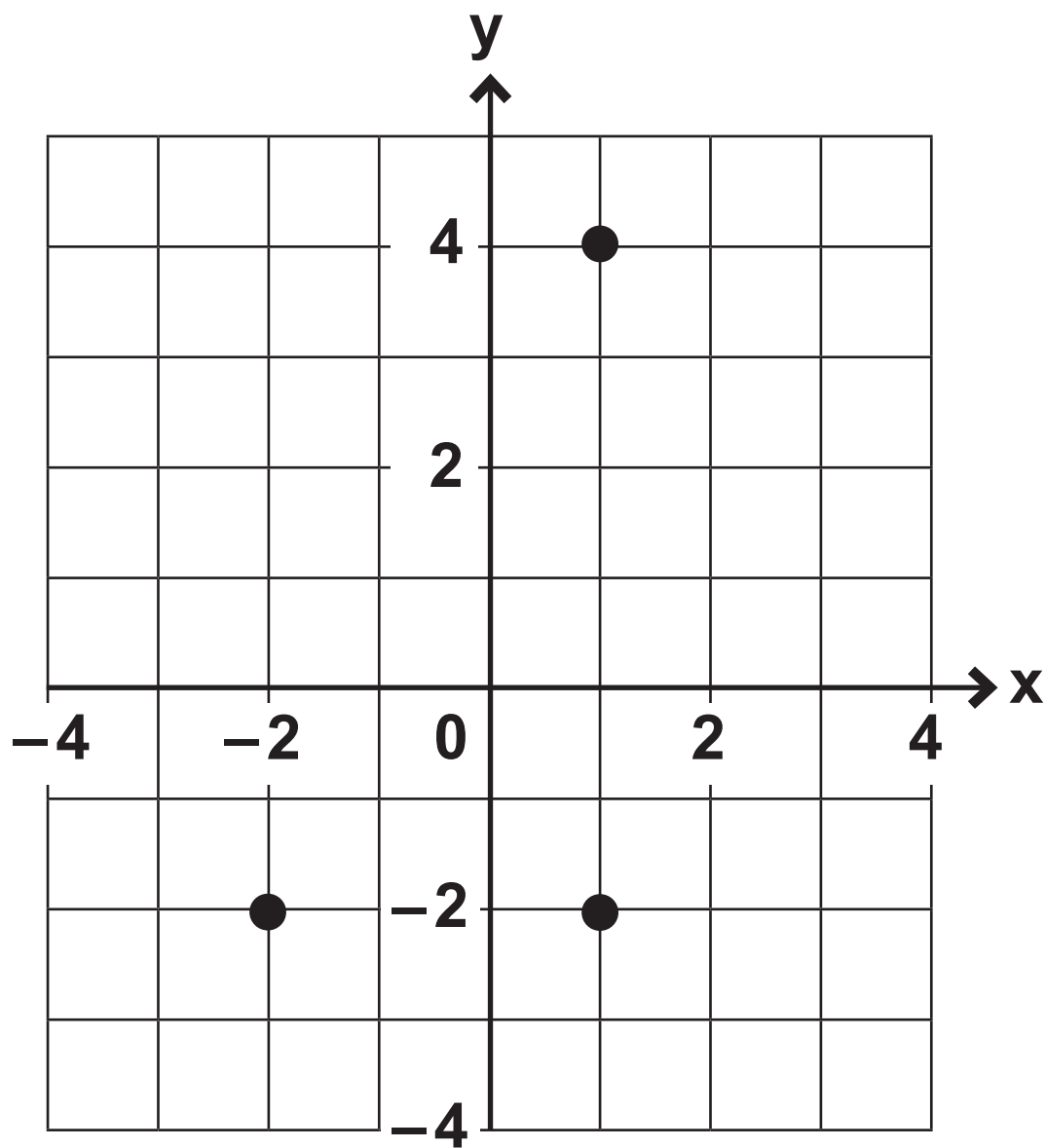
Her model is **40** centimetres tall.

How wide is her model?

_____ **cm**

10. Layla draws a rectangle on the coordinate grid below.

Three of the vertices are marked.



What are the coordinates of the missing vertex?

(,)

11. Stefan has **600** millilitres of water in a bottle.

He pours **130 ml** into one jug.

He pours **155 ml** into another jug.

How many millilitres of water are left in Stefan's bottle?

Show your method.

_____ ml

12. The table below shows the areas of the United Kingdom and Jamaica.

Country	Area (square kilometres)
United Kingdom	240 000
Jamaica	10 000

The area of the United Kingdom is larger than the area of Jamaica.

How many times larger is the United Kingdom?

_____ times larger

13. A box contains **2·6 kg** of washing powder.

Jack uses **65** grams of powder for each wash.

He uses all the powder.

How many washes did Jack do?

Show your method.

_____ washes

14. Two of the angles in a triangle are 70° and 40°

Jack says that the triangle is equilateral.

Explain why Jack is not correct.

15. A shop prints designs on T-shirts.

They use the formula below to work out the price for printing a design.

$$\text{price} = 60\text{p} \times \text{number of colours} + \text{£}1.25$$

What is the price for printing a design that has 3 colours in it?

£ _____

Amina has £5 to spend on printing a design.

What is the greatest number of colours she can have in the design?

Show your method.

_____ colours

16. A book has **276** pages.

Amina has read $\frac{1}{3}$ of the book.

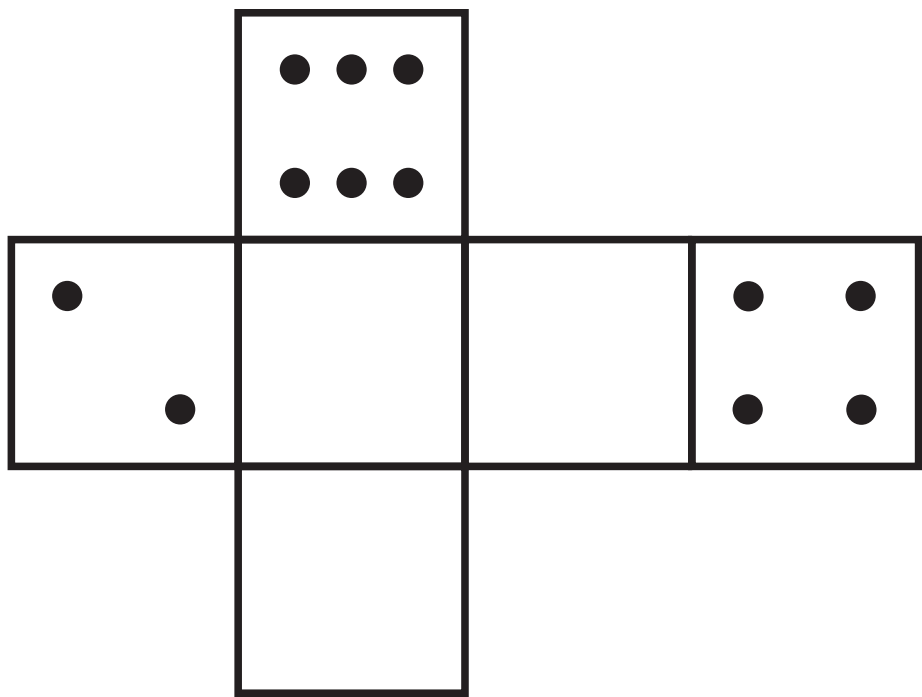
How many pages are left for Amina to read?

Show your method.

_____ pages

17. On a dice, the sum of the dots on opposite faces is always 7

Draw dots on the three empty faces of the net below so that it could fold up to make a dice.



18. A vegetable garden is planted with potatoes, cabbages and carrots.

$\frac{2}{3}$ of the area is planted with potatoes.

$\frac{1}{4}$ of the area is planted with cabbages.

The remaining area is planted with carrots.

What fraction of the garden is planted with carrots?

Show your method.

19. Look at the multiplication below.

$$33\,630 = 354 \times 95$$

Use this multiplication to complete the three calculations below.

$$354 \times 9.5 = \underline{\hspace{2cm}}$$

$$3\,540 \times 95 = \underline{\hspace{2cm}}$$

$$3\,363 \div 95 = \underline{\hspace{2cm}}$$

20. In March, Ken collects **2** or **3** or **4** eggs each day from his hens.

In the first **20** days, Ken collects **57** eggs altogether.

There are **31** days in March.

What is the greatest number of eggs Ken can collect in March?

Show your method.

_____ eggs

21. Jack finished a sponsored run in **53** minutes **25** seconds.

Ally finished **3** minutes **50** seconds **after** Jack.

How long did Ally take?

_____ min _____ sec

Layla finished the run **8** minutes **45** seconds **before** Jack.

How long did Layla take?

_____ min _____ sec

END OF TEST

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2018 key stage 2 mathematics

Paper 3: reasoning

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2018 national curriculum tests

Key stage 2

Mathematics

Administering the modified large print (MLP)
version of Paper 3: reasoning

THURSDAY 17 MAY 2018

CONFIDENTIAL: This pack must be kept secure and unopened until the start of the test on **Thursday 17 May**.

Early opening, up to 1 hour before the test starts, is only allowed if access to the contents is needed to make adaptations to meet individual pupils' needs. Early opening of more than 1 hour is only allowed if permission has been granted by STA.

Please ensure you have read and understood the 2018 modified test administration guidance before opening this pack.

Pack contents:

- Administration instructions for the MLP key stage 2 mathematics test Paper 3: reasoning (overleaf)
- 1 copy of the MLP Paper 3: reasoning

For test administration



Standards
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Agency

Print: STA/18/8073/p ISBN: 978-1-78644-756-2 Electronic: STA/18/8073/e ISBN: 978-1-78644-768-5

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2018 Key stage 2 mathematics test
The following information explains how to administer the modified large print (MLP) version of the key stage 2 mathematics test Paper 3: reasoning. Modified test administration guidance is available at www.gov.uk/sta . If you have any questions, you should check with your headteacher or key stage 2 test co-ordinator before you administer the test.
Please follow these instructions correctly to ensure the test is properly administered. Failure to administer the test correctly could result in a maladministration investigation.

Format
The key stage 2 mathematics test consists of 3 papers. The papers must be administered in order. Pupils can have a break between the papers. Test packs for each test must not be opened until the pupils are in the test room ready to complete the test, unless early opening is required to meet individual pupils' needs.
The scheduled day for the administration of Paper 3 is Thursday 17 May.
Paper 3: reasoning consists of a single MLP test paper.
Pupils will have 40 minutes to complete the paper, plus up to 100% additional time.
You must not refer to the standard test questions when administering this test.

Equipment
Each pupil will need the equipment specified below:
- a blue/black pen or dark pencil - a sharp, dark pencil for mathematical drawing - a ruler (showing centimetres) - an angle measurer or protractor (papers 2 and 3 only) - a mirror (papers 2 and 3 only). Rubbers are allowed, but please encourage pupils to cross out answers they wish to change instead of rubbing them out.
Pupils may use the following equipment, if this is normal classroom practice:
- monolingual English electronic spell checkers - bilingual word lists - bilingual dictionaries or electronic translators provided they only give word-for-word translations.
Pupils are not allowed:
- calculators - tracing paper.

Assistance
You must ensure that nothing you say or do during a test could be interpreted as giving pupils an advantage, e.g. indicating an answer is correct or incorrect, or suggesting the pupil looks at an answer again.
If a pupil requests it, you may read a question to the pupil on a one-to-one basis.
If reading to a pupil, you may only read words and numbers, but not mathematical symbols. This is to ensure pupils are not given an unfair advantage by having the function inadvertently explained by reading its name.
At a pupil's request, you may point to parts of the test paper such as charts, diagrams, statements and equations, but you must not explain the information or help the pupil by interpreting it.
The following examples illustrate how to deal with some common situations:
Q. What does 'quadrilateral' or '>' or '<' mean?
A. I can't tell you, but think hard and try to remember. We can talk about it after the test.
Q. What is '0.6'?
A. That's nought point six.

You must not explain any subject-specific terminology. If any context or words related to a question are unfamiliar to a pupil, you may show them related objects or pictures, or describe the context.

Guidance for specific questions
There is no additional guidance needed to administer the MLP version of Paper 3: reasoning.

Before the test begins
Review the list of pupils with any particular individual needs, e.g. pupils who may need a rest break, a scribe or a transcript made at the end of the test.
Ensure you know how to administer any access arrangements correctly. Please refer to the 2018 key stage 2 access arrangements guidance.
It is important that the pupils' names on their tests match the names on the test attendance register. Check with your test co-ordinator whether any pupil in your group is known by a different name in school, or has changed their name since pupil registration. This is so you can ensure the pupil writes the correct name on their test paper.
Check there are enough test administrators to maintain adequate supervision during the test. You should consider the possibility that at least one test administrator might need to leave the room with a pupil.
Ensure that you understand how to deal with issues during the tests.
Write the school's name and DfE number on a board that is visible to all pupils.
Leave space on the board to write the start and finish times of the test.

What to do at the start of the test
Check that seating is appropriately spaced and that no pupil can see another pupil's test paper.
Check that pupils don't have mobile phones or other disruptive items.
Check that pupils don't have any materials or equipment that may give them extra help.
Ensure each pupil who needs it has 1 MLP copy of mathematics Paper 3: reasoning.
Write the start and finish times on a board so that all the pupils can see them.

How to introduce the test
It is important to brief pupils fully at the start of each test. Use this script to introduce mathematics Paper 3: reasoning.
<i>This is the key stage 2 mathematics Paper 3: reasoning.</i>
<i>You will need a blue or black pen, a sharp, dark pencil, a ruler, a protractor and a mirror.</i>
<i>Write your name, school name and DfE number on the front of your mathematics test Paper 3: reasoning.</i>
[If any pupil's name differs from the name provided during pupil registration, instruct the pupil to write both names on the paper.]
<i>Open your test paper to page 3. I will read the instructions to you.</i>
<i>You must not use a calculator to answer any questions in this test.</i>
<i>You have up to 80 minutes to complete this test. This includes your additional time allowance.</i>
<i>Follow the instructions for each question.</i>
<i>Work as quickly and as carefully as you can.</i>
<i>If you need to do working out, you can use any space on the page.</i>
<i>Some questions say: 'Show your method'. For these questions you may get a mark for showing your method.</i>
<i>If you cannot do a question, go on to the next one. You can come back to it later, if you have time.</i>

<i>If you finish before the end, go back and check your work.</i>
<i>If you want to change your answer, put a line through the response you don't want the marker to read.</i>
<i>If you want to change a drawing, you should either put a line through the response you don't want the marker to read, or use a rubber.</i>
<i>If you have to use a rubber, make sure you rub out your answer completely before writing a new one.</i>
<i>Remember to check your work carefully.</i>
<i>If you have any questions during the test, you should put your hand up and wait for someone to come to you. Remember, I can't help you answer any of the test questions.</i>
<i>You must not talk to each other.</i>
<i>Do you have any questions?</i>
<i>I will tell you when you have 5 minutes left. I will tell you when the test is over and to stop writing.</i>
<i>You may now start the test.</i>

How to deal with issues during the test
It is impossible to plan for every scenario. Whatever action you take, pupil safety must always be your first consideration.
In the following circumstances, you will need to stop the test either for an individual pupil, a group of pupils or for the whole cohort:
- test papers are incorrectly collated or the print is illegible - an incorrect test has been administered - a fire alarm goes off - a pupil is unwell - a pupil needs to leave the room - a pupil is caught cheating.
If you need to stop the test:
- make a note of the time - make sure the pupils are kept under test conditions and that they are supervised - if the pupils have to leave the room, ensure they do not talk about the test - speak to your test co-ordinator or a senior member of staff for advice on what to do next - consider contacting the national curriculum assessments helpline on 0300 303 3013 for further advice.
You should brief your headteacher on how the incident was dealt with, once the test is over.

What to do at the end of the test
If you need to make a transcript of a test script, complete it with the individual pupil at the end of the test, under test conditions. Particular care should be taken to ensure accurate transcriptions are made and the pupil's answers are not corrected or amended.
Ensure you inform your senior member of staff/test co-ordinator if you have made a transcript, or if a pupil has used a scribe, word processor or other electronic or technical device. This is so they can complete the appropriate online notification.
Make sure you have collected every test script. Return them immediately to the senior member of staff who is responsible for collating the tests.
Do not look at, review or amend pupils' answers in any way (unless it is necessary to make a transcript). If you tamper with or make changes to pupils' answers, it will be considered maladministration and results could be annulled.
Do not keep or photocopy test scripts for any reason.
All test materials, including any unused test papers, must be stored securely until Friday 25 May.

2018 national curriculum tests

Key stage 2

Mathematics

Amendments to the mark schemes (AMS)

Modified large print (MLP)



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Introduction

This guidance details the amendments made to the mark schemes for questions which have been adapted, or replaced, in the modified large print (MLP) version of the key stage 2 mathematics test materials.

This guidance must be used in conjunction with the standard version of the key stage 2 mathematics mark schemes. Refer to the standard mark schemes when marking the MLP test papers unless an alternative is given in this guidance.

Amendments to the mark scheme

Amendments to the standard test mark schemes are only provided where amendments to a question are such that the question cannot be marked using the standard test mark scheme.

Amendments to the mark schemes are not provided where the only change has been to further divide the question into subsections or where the layout of the question is different.

The mark schemes have been amended in some respects for the following questions:

Paper 1	20, 22, 29 and 36
Paper 2	1, 2, 3, 11, 12 and 21
Paper 3	4, 5, 10, 11 and 17

General guidance to be applied throughout the MLP papers

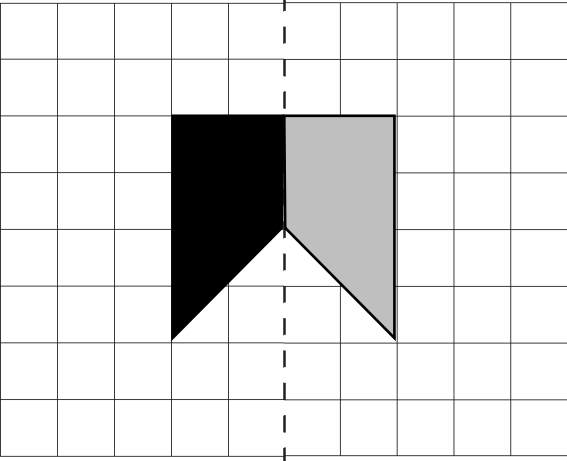
- You should make every effort to understand what the pupil has written in an answer, without reading into the answer anything that the pupil did not intend.
- Some pupils with visual impairment find it difficult to get their answers across clearly. It may take you longer to read their answers. Apply the mark schemes, but be sympathetic to their difficulties.
- Pupils with visual impairment find it difficult to draw accurately. Often thick pens or pencils are used by these pupils. You should make every effort to be fair in marking these questions and take into account what appears to be the pupil's intention.
- Unless otherwise indicated in this document, there should be an increased tolerance level for all drawing and measuring. In general, pupils will only be expected to measure lengths to the nearest 0.5cm and angles to the nearest 5°.
- If children have missed any answer lines or spaces within the text, their answers may be elsewhere on the page. Any unambiguous indication of the correct answer should be credited, working within the parameters of the mark scheme.
- Questions that appear as horizontal tick boxes in the standard version of the test may have been changed to vertical in the MLP version, in order to make it easier for pupils to track across the page. The correct answer will be the same as in the standard mark schemes.
- Markers should contact their supervisors if they have any problems applying the mark scheme to MLP scripts, or with specific responses. All supervisors have contact details of markers who will provide specialist advice.

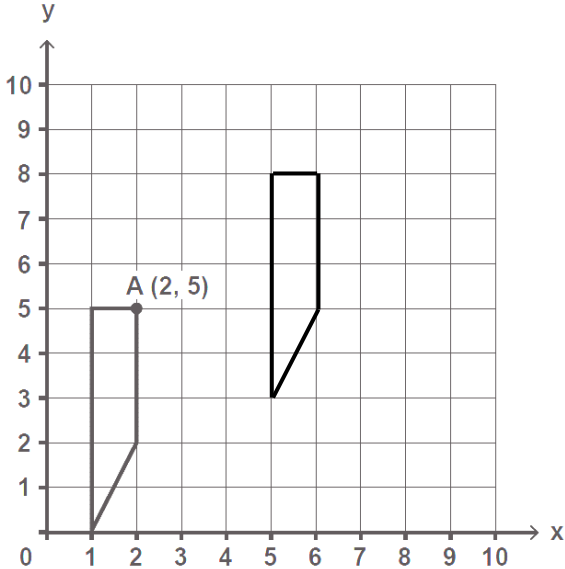
Amendments to mark schemes for Paper 1: arithmetic

Please use the standard mark schemes to mark Paper 1: arithmetic.

For questions 20, 22, 29 and 36 the standard mark schemes expect a ‘formal method’ for long multiplication or long division. If the answer is incorrect, visually impaired pupils should be credited the method mark if they have used **any** appropriate method with no more than **ONE** arithmetic error; a formal method is not required. Working must be carried through to reach a final answer for the award of **ONE** mark.

Amendments to mark schemes for Paper 2: reasoning

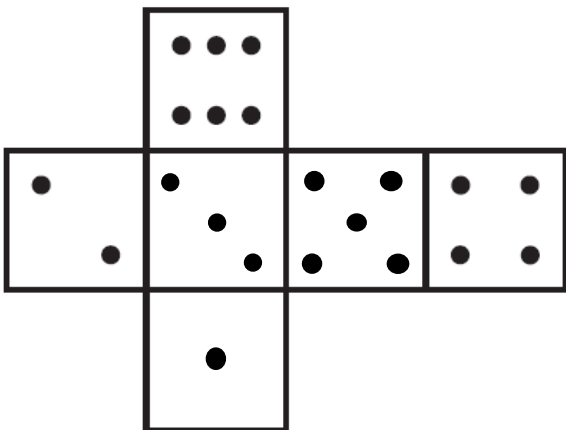
Qu.	Requirement	Mark	Additional guidance
1	$28 + 67 = 95$ OR $67 + 28 = 95$	1m	All 6 numbers must be correct for the award of ONE mark.
2	Diagram completed as shown: 	1m	Accept inaccuracies in drawing provided the intention is clear. Shape need not be shaded for the award of ONE mark.
3	A point on the line in the range 6.0 cm to 7.0 cm exclusive from A.	1m	

Qu.	Requirement	Mark	Additional guidance
11	Award TWO marks for three numbers written as shown: 5 5 8 If the answer is incorrect, award ONE mark for two correct numbers, correctly placed.	Up to 2m	
12	Shape located correctly, as shown: 	1m	Accept inaccuracies in drawing provided the intention is clear. Shape need not be shaded for the award of ONE mark.

21	▲ = 36 ● = 25	1m 1m	Award ONE mark for an answer of : • $(111 - \text{answer for triangle}) \div 3$ OR • $(147 - 2 \times \text{answer for triangle}) \div 3$ Accept values correctly rounded or truncated to an integer if the answer for triangle is a non-integer.
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Amendments to mark schemes for Paper 3: reasoning

Qu.	Requirement	Mark	Additional guidance
4	Award TWO marks for 1 AND 6 in this order. Award ONE mark for either number correct.	Up to 2m	Accept $5321 + 748 = 6069$
5	Award TWO marks for three correct numbers and no others as shown: 2 3 6 If the answer is incorrect, award ONE mark for: - only two numbers correct and no incorrect numbers written OR - three numbers correct and one incorrect number written.	Up to 2m	Accept in any order.

Qu.	Requirement	Mark	Additional guidance
10	$(-2, 4)$	1m	Do not accept $(2-, 4)$
11	315 If the answer is incorrect, award ONE mark for evidence of appropriate method, e.g. $130 + 155 = 285$ $600 - 285 =$ OR $600 - 130 - 155 =$	Up to 2m	Answer need not be obtained for the award of ONE mark.
17	Net completed as shown:  The net consists of six squares arranged in a cross shape. The top square has 6 dots (2 rows of 3). The middle row has four squares: the first has 1 dot (top-left), the second has 2 dots (top-left, center), the third has 5 dots (top-left, center, bottom-right), and the fourth has 4 dots (top-left, top-right, bottom-left, bottom-right). The bottom square has 3 dots (bottom-left, bottom-center, bottom-right).	1m	Accept unconventional arrangements of the dots, provided the intended number is clear. Accept numbers instead of dots.

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2018 key stage 2 mathematics: amendments to mark schemes for MLP
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2018 national curriculum tests

Key stage 2

Mathematics

Amendments to the mark schemes (AMS)

Braille



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Introduction

This guidance details the amendments made to the mark schemes for questions which have been adapted, or replaced, in the braille version of the key stage 2 mathematics test materials.

The standard version of the key stage 2 mathematics mark schemes, should be used in conjunction with the additional guidance in this document. Markers should refer to the standard mark schemes when marking the braille test papers unless an alternative is given in this guidance.

Amendments to the mark scheme

Amendments to the standard test mark schemes are only provided where amendments to a question are such that the question cannot be marked using the standard test mark scheme.

Amendments to the mark schemes are not provided where the only change has been to further divide the question into subsections or where the layout of the question is different.

The mark schemes have been amended in some respects for the following questions:

Paper 1	20, 22, 24 and 36.
Paper 2	1, 2, 3, 4, 7, 10, 11, 12, 16, 19 and 21
Paper 3	1, 4, 5, 6, 10, 11 and 17

General guidance to be applied throughout the braille papers

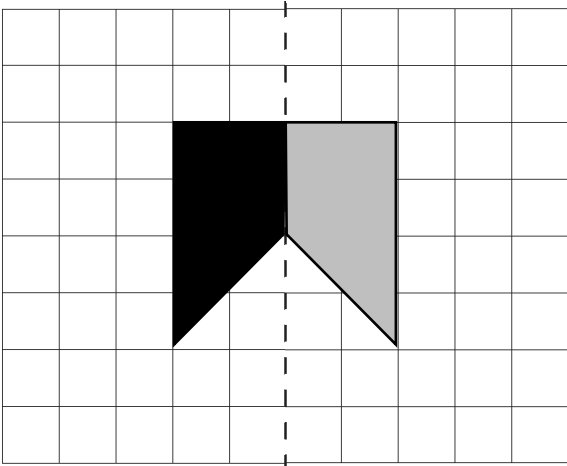
- You should make every effort to understand what the pupil has written in an answer, without reading into the answer anything that the pupil did not intend.
- Some pupils with visual impairment find it difficult to get their answers across clearly. It may take you longer to read their answers. Apply the mark schemes, but be sympathetic to their difficulties.
- Pupils with visual impairment find it difficult to draw accurately. Often thick pens or pencils are used by these pupils. You should make every effort to be fair in marking these questions and take into account what appears to be the pupil's intention.
- Unless otherwise indicated in this document, there should be an increased tolerance level for all drawing and measuring. In general, pupils will only be expected to measure lengths to the nearest 0.5cm and angles to the nearest 5°.
- Any unambiguous indication of the correct answer should be credited.
- Some braille questions are asked differently to the standard version, but the differences are sufficiently small that you should still be able to apply the standard mark scheme, for example, pupils are asked to write rather than circle the answer.

Amendments to mark schemes for Paper 1: arithmetic

Please use the standard mark schemes to mark Paper 1: arithmetic.

For questions 20, 22, 29 and 36 the standard mark schemes expect a ‘formal method’ for long multiplication or long division. If the answer is incorrect, visually impaired pupils should be credited the method mark if they have used **any** appropriate method with no more than **ONE** arithmetic error; a formal method is not required. Working must be carried through to reach a final answer for the award of **ONE** mark.

Amendments to mark schemes for Paper 2: reasoning

Qu.	Requirement	Mark	Additional guidance
1	$28 + 67 = 95$ OR $67 + 28 = 95$	1m	All 6 numbers must be correct for the award of ONE mark.
2	Diagram completed as shown: 	1m	Accept inaccuracies in drawing provided the intention is clear.
3	Accept a mark on the line in the range 6.0 cm to 7.0 cm exclusive from A	1m	
4	a) 12 b) 18	1m	Both values must be correct for ONE mark.
7	0.25 AND $\frac{25}{100}$ written in any order.	1m	Both numbers must be given for the award of ONE mark. No additional numbers must be written.

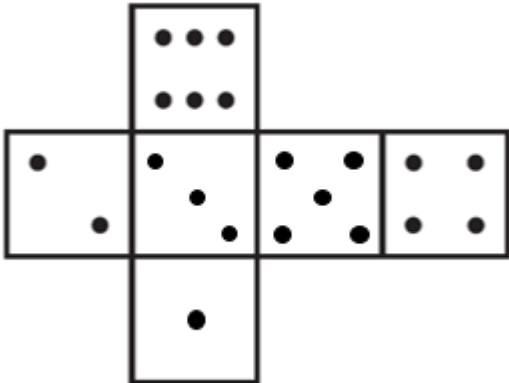
Qu.	Requirement	Mark	Additional guidance
10	a) < b) = c) > d) <	Up to 2m	All four symbols must be correct for the award of TWO marks. Award ONE mark for any three symbols correct.
11	a) 5 b) 5 c) 8	Up to 2m	All three numbers must be correct for the award of TWO marks. If the answer is incorrect, award ONE mark for two correct numbers, correctly placed.
12	Shape located correctly, as shown:	1m	Accept inaccuracies in drawing provided the intention is clear.

16	Q AND R in either order If the answer is incorrect, award ONE mark for: - only one correct letter written OR - two correct letters written and one incorrect letter written	Up to 2m	
19	R	1m	Accept $4 - 2 + 2$ written
21	triangle = 36 circle = 25	1m 1m	Award ONE mark for an answer of: $(111 - \text{answer for triangle}) \div 3$ OR $(147 - 2 \times \text{answer for triangle}) \div 3$ Accept values correctly rounded or truncated to an integer if the answer for triangle is a non-integer.

Amendments to mark schemes for Paper 3: reasoning

Qu.	Requirement	Mark	Additional guidance
1	Award TWO marks for three correct numbers in this order: 35 56 70 If the answer is incorrect, award ONE mark for two numbers correctly placed.	Up to 2m	
4	Award TWO marks for 1 AND 6 in this order. Award ONE mark for either number correct.	Up to 2m	Accept $5321 + 748 = 6069$ written.
5	Award TWO marks for three correct numbers and no others as shown: 2 3 6 If the answer is incorrect, award ONE mark for: - only two numbers correct and no incorrect numbers written OR - three numbers correct and one incorrect number written	Up to 2m	Accept in any order.
6	Award TWO marks for P AND R in either order and no other letters. If the answer is incorrect, award ONE mark for: - only one correct letter written and none incorrect. OR - two correct letters written and one incorrect letter written.	Up to 2m	

Qu.	Requirement	Mark	Additional guidance
10	$(-2, 4)$	1m	Do not accept $(2-, 4)$
11	315 If the answer is incorrect, award ONE mark for evidence of appropriate method, e.g. $130 + 155 = 285$ $600 - 285 =$ OR $600 - 130 - 155 =$	Up to 2m	Answer need not be obtained for the award of ONE mark.

Qu.	Requirement	Mark	Additional guidance
17	Net completed as shown: 	1m	Accept unconventional arrangements of the dots, provided the intended number is clear. Accept numbers instead of dots.



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