Key Stage 2 SATs

Mathematics Practice Test and Mark Scheme

Paper 2: Reasoning

Pack 1: 2016 (new curriculum)
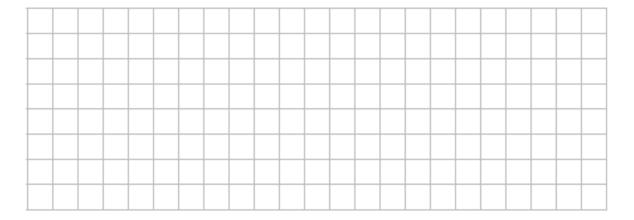
Third Space Learning

First name	
Last name	
Class	
Score	/ 35

Instructions

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

Questions and answers

- 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 the space around the question.
- Do not write over any barcodes.
- **Some questions have a method box like this**:

- 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**.

Marks

- The number under each line at the side of the page tells you the maximum number of marks for each question.

1 Circle the number that is closest to 1,000

1,003   **909**   **1,090**   **996**

1 mark

Write the missing value to make this number sentence correct.
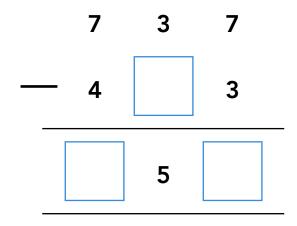
[   ] **+ 100 = 14,507**

1 mark

2 This table shows average house prices in five cities in Britain:

Town	Average house price
Portsmouth	£215,700
Bournemouth	£265,000
Southampton	£214,600
Edinburgh	£203,500
Bristol	£253,400

Which of these cities has the **lowest** average property price?

1 mark

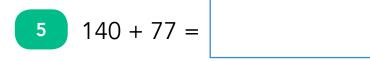**3** Write the **three** missing digits to make this subtraction correct.

$$
\begin{array}{r}
7 \quad 3 \quad 7 \\
- \quad 4 \quad \boxed{} \quad 3 \\
\hline
\boxed{} \quad 5 \quad \boxed{} \\
\hline
\end{array}
$$

2 marks

4 This table shows the number of
new car registrations in one year.

Brand	Registrations
Fiat	38,549
Hyundai	56,580
Jaguar	19,958
Land Rover	49,015
Toyota	62,030

What was the combined total of the
two highest selling brands?

1 mark
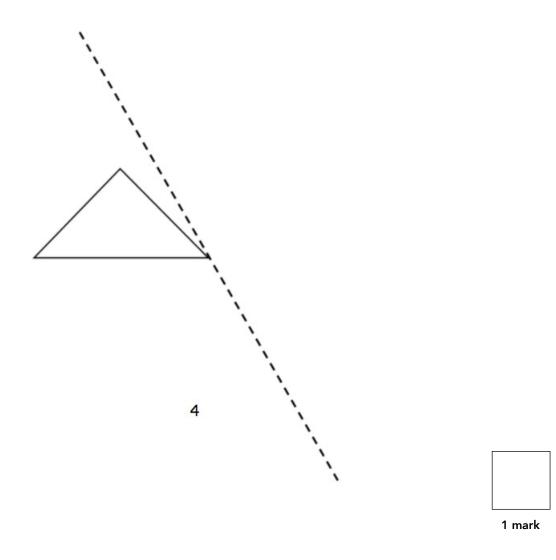
Volvo had **11,515 fewer** registrations than Fiat. Complete the table to show the number of Volvo registrations.

Brand	Registrations
Fiat	38,549
Hyundai	56,510
Jaguar	19,958
Land Rover	49,015
Toyota	62,030
Volvo	

1 mark

5 140 + 77 =   - 20

1 mark

6 Draw the **reflection** of the shape in the mirror line.

4

1 mark

7 $\dfrac{2}{6}$ + $\dfrac{3}{12}$ + $\dfrac{1}{3}$ = $\dfrac{}{}$
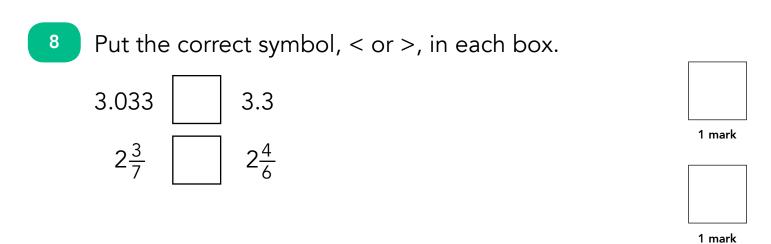
1 mark

Write the letter for each fraction in order of size starting with the **smallest** fraction.
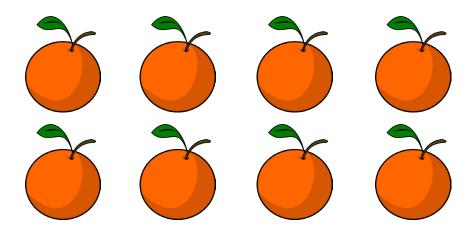
One has been done for you.

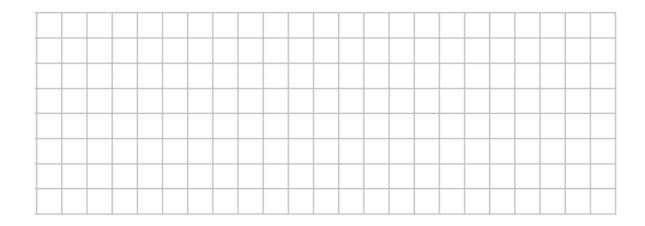A. $\dfrac{9}{10}$　　B. $\dfrac{1}{2}$　　C. $1\dfrac{3}{4}$　　D. $\dfrac{40}{30}$　　E. $\dfrac{4}{5}$

____　__**E**__　____　____　____

1 mark

8 Put the correct symbol, < or >, in each box.

3.033 ☐ 3.3

$2\frac{3}{7}$ ☐ $2\frac{4}{6}$

☐
1 mark

☐
1 mark

9 8 oranges cost £1.52.

4 oranges and a banana cost 90p.

How much does **one banana** cost?
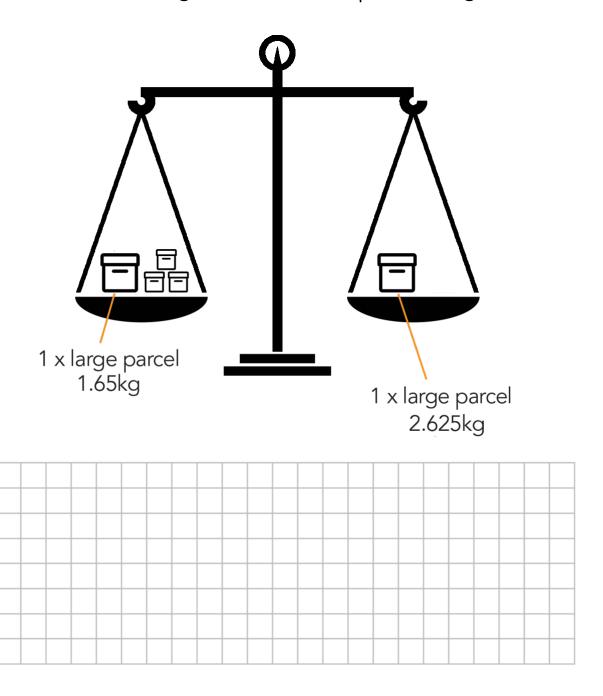Show your method.

2 marks

10 24 x [   ] = 192

1 mark

11 This diagram shows some parcels on a balance scale. Each small parcel is identical.

Calculate the weight of **one** small parcel, in grams.

1 x large parcel
1.65kg

1 x large parcel
2.625kg

g

2 marks

12 Work out the value of p.

$7p - 4 = 24$

$p =$

1 mark

If $t = 12$, what is $5t + 8$?

1 mark

13 In the sale a pair of boots has been **reduced** by 25%. They now cost £37.50. What was the original price of the boots?

£

2 marks

14 Complete this calculation using two different **prime numbers**.

$$\boxed{} \times \boxed{} = 247$$

1 mark

15 A delivery company charges £9.75 to deliver parcels weighing up to 20kg, then 30p for every 500 grams over that weight.

How much would they charge to deliver a parcel weighing 32kg?

2 marks

16 Write the number that is twenty less than one million.

1 mark

Write the number that is ten thousand less than ten million.

1 mark

17 Calculate the sizes of angles a and b.
The diagram is not to scale.

a =   °

1 mark

b =   °

1 mark

18 Write the missing numbers.

$100 \div \boxed{} = 2.5$

1 mark

$30 \times \boxed{} = 27$

1 mark

19 Shape A is an isosceles triangle drawn on co-ordinate axes.

Write the missing co-ordinate.

1 mark

20 Mr and Mrs Scott have employed a decorator to paint their kitchen and lay a new floor.

The decorator charges £10 per hour.
The paint costs £11.40 per litre.
Flooring costs £26.70 per m²
The decorator spends $18\frac{1}{2}$ hours decorating the kitchen.

He uses 3 litres of paint and 20m² of flooring.

Calculate the total cost to decorate the kitchen.

£

3 marks

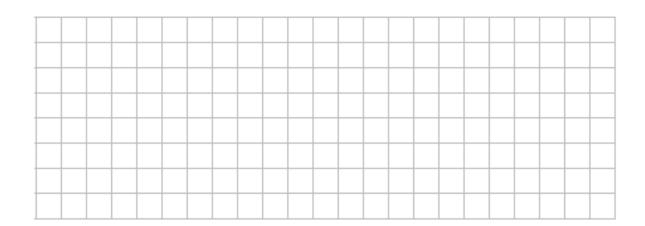The instructions and principles of this mark scheme closely follow the guidance in the 2016 national curriculum tests. We have deliberately not set a limited time for the test paper as a teacher may want to very it according to the standard individual children are working at.

The national curriculum test allows 40 minutes to complete this test.

T = Working towards expected standard
E = Working at expected standard
G = Working at greater depth within expected standard

Q	Required answer	Mark	Acceptable answer or additional guidance	Content Domain Ref	NC strand	Level of demand
1	a) 1,003 circled	1m	Accept alternative unambiguous indications, e.g. numbers ticked or underlined	3N2a	Number	T
	b) 14,407	1m		3N2b	Number	T
2	Edinburgh	1m		5N2	Number	E
3	Award TWO marks for: 7 3 7 − 4 [8] 3 [2] 5 [4] If the answer is incorrect, award ONE mark for two digits correct.	Up to 2m		5C2	Calculation	E E
4	a) 118,610	1m		4S1	Statistics	T
	b) 27,034	1m		5S1	Statistics	T
5	237	1m		3C4	Calculation	T
6	Diagram completed as shown:	1m	Accept slight inaccuracies, provided the intention is clear	4G2c	Geometry	E

Q	Required answer	Mark	Acceptable answer or additional guidance	Content Domain Ref	NC strand	Level of demand
7	a) $\dfrac{11}{12}$	1m	Accept equivalent fractions, e.g. 22/24	6F4	Fractions	E
	b) B E A D C	1m	Accept: 12 E 9/10 1 3/4 40/30	6F3	Fractions	E
8	<	1m		5F8	Fractions	E
	<	1m		6F3		E
9	Award TWO marks for the correct answer of 14p If the answer is incorrect award ONE mark for evidence of an appropriate method, e.g. 152 ÷ 2 = 76 90 - 76 OR 152 ÷ 8 = 19 4 x 19 = 76 90 - 76	Up to 2m	Accept for TWO marks a clear indication of the correct amount, e.g. £0.14, £0.14p Accept for ONE mark an answer of 0.14p, £14p or £14 as evidence of an appropriate method	3M9a	Measures	E E
10	8	1m		3C7	Calculation	T

Q	Required answer	Mark	Acceptable answer or additional guidance	Content Domain Ref	NC strand	Level of demand
11	Award TWO marks for the correct answer of 325g If the answer is incorrect award ONE mark for evidence of an appropriate method, e.g. 2,625-1,650 = 975 975 ÷ 3	Up to 2m	Accept for TWO marks a clear indication of the correct amount, e.g. 0kg 325g, 0.325kg Accept for ONE mark an answer of 325kg as evidence of an appropriate method	5M9C	Measures	E E
12	$p = 4$ 68	1m 1m		6A2 6A2	Algebra	E E
13	Award TWO marks for the correct answer £50 If the answer is incorrect award ONE mark for evidence of an appropriate method, e.g. £37.50 ÷ 3 = £12.50 £37.50 + £12.50	Up to 2m	Accept for TWO marks a clear indication of the correct amount, e.g. £50.00, £50-00 Accept for ONE mark an answer of £50p or £5000p as evidence of an appropriate method	6R2	Ratio and proportion	G G
14	13 x 19 = 247 OR 19 x 13 = 247	1m		6C5	Calculation	G

Q	Required answer	Mark	Acceptable answer or additional guidance	Content Domain Ref	NC strand	Level of demand
15	Award TWO marks for the correct answer £16.95 If the answer is incorrect award ONE mark for evidence of an appropriate method, e.g. 30 x 24 = 720 720 + 975	Up to 2m	Accept for TWO marks a clear indication of the correct amount, e.g. 1695p, £16.95p Accept for ONE mark an answer of £1695, £169.50 or £1695p as evidence of an appropriate method	5M5	Measures	G G
16	a) 999,980 b) 9,990,000	1m 1m		6N2 6N2	Number	E E
17	a) 48° b) 35°	1m 1m		6G4a 6G4a	Geometry Geometry	E E
18	a) 40 b) 0.9	1m 1m		6C8	Calculation	E E
19	(-1,-3)	1m		6P3	Geometry	E

Q	Required answer	Mark	Acceptable answer or additional guidance	Content Domain Ref	NC strand	Level of demand
20	Award THREE marks for the correct answer £753.20 If the answer is incorrect award TWO marks for: • Sight of £185 AND £34.20 AND £534 • Evidence of appropriate methods with no more than one arithmetic error If the answer is incorrect award ONE mark for evidence of an appropriate complete method	3m	Accept for THREE marks a clear indication of the correct amount, e.g. £753.20p, £753 20, £753-20 Two marks can be awarded if a misread number is followed through correctly	6C8	Calculation	G G G

Balance of difficulty
of questions in the paper

5 marks at working towards
22 marks at the expected standard
8 marks at working at greater depth

Thresholds

Working towards the expected standard: Criteria for 'working at the expected standard' have not been met.

Working at the expected standard: at least 11 of the 22 'expected' marks are obtained, together with all 5 of the working towards marks, but none of the 8 marks graded 'greater depth'. This mark is 16 out of 35.

Working at greater depth: all of the 5 working toward marks are obtained, plus at least 90% of the 'expected' marks and at least 50% of the 'greater depth' marks. This mark is 29 out of 35.

Third Space Learning
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Lisa Graham, Deputy Head, St Hughes C-of-E Primary

"My tutor understands when I don't get things right. She helps me through at a steady pace and always believes I can do it :)"

Millie, Year 5, Worcester

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