2018 national curriculum tests

Key stage 2

Mathematics

Paper 1: arithmetic

First name	
Middle name	
Last name	
Date of birth	Day ☐ Month ☐ Year ☐
School name	
DfE number	

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https://www.SATs-Papers.co.uk
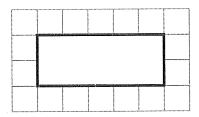
Instructions

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

Questions and answers

You have **30 minutes** to complete this test.

Work as quickly and as carefully as you can.

Put your answer 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.**
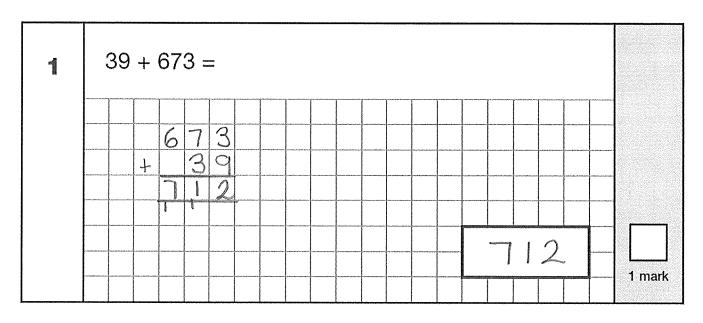You can come back to it later, if you have time.

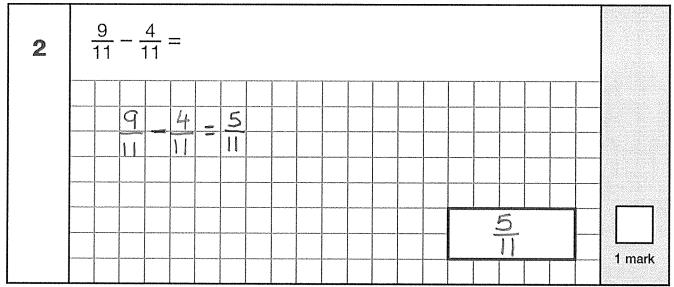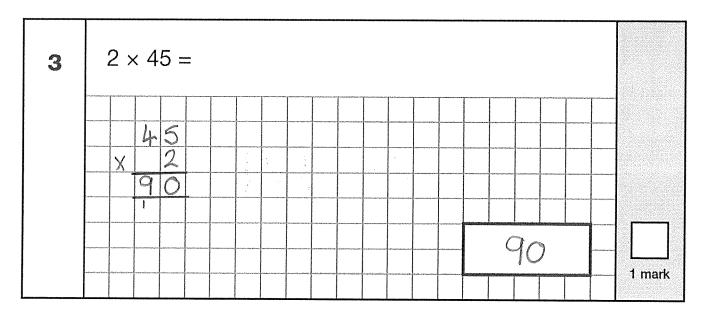If you finish before the end, **go back and check your work.**

Marks

The number under each box at the side of the page tells you the number of marks available for each question.

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 a formal method.

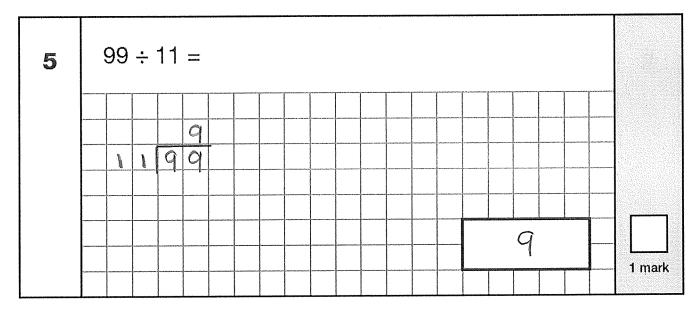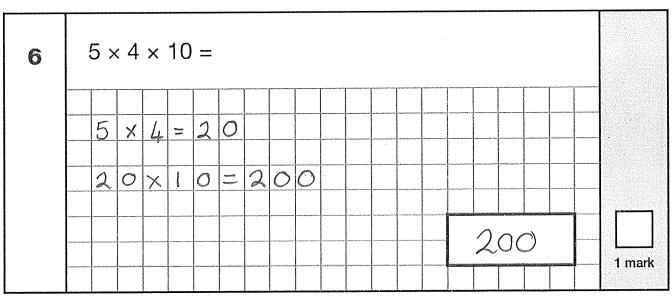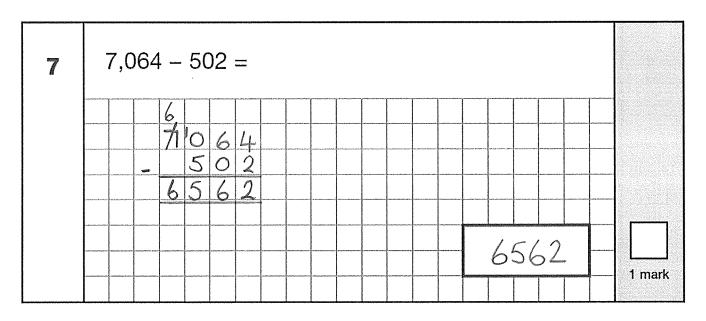All other questions are worth **1 mark each.**

1 39 + 673 =

$$
\begin{array}{r}
6\ 7\ 3 \\
+\ \ \ 3\ 9 \\
\hline
7\ 1\ 2 \\
\end{array}
$$

712

1 mark

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

$\frac{9}{11} - \frac{4}{11} = \frac{5}{11}$

$\frac{5}{11}$

1 mark

3 2 × 45 =

$$
\begin{array}{r}
4\ 5 \\
\times\ \ \ 2 \\
\hline
9\ 0 \\
\end{array}
$$

90

1 mark

4 $838 \div 1 =$

$$838$$
$$1|838$$

Any number divided by 1 remains the same.

838

1 mark

5 $99 \div 11 =$

$$9$$
$$11|99$$

9

1 mark

6 $5 \times 4 \times 10 =$

$5 \times 4 = 20$

$20 \times 10 = 200$

200

1 mark

7 $7{,}064 - 502 =$

$$\begin{array}{r} {}^{6}\!\!\not7\,{}^{1}064 \\ -\ \ 502 \\ \hline 6562 \end{array}$$

6562

1 mark

8 $6^2 + 10 =$

$6^2 = 6 \times 6 = 36$

$36 + 10 = 46$

46

1 mark

9 $56.38 + 24.7 =$

$$\begin{array}{r} 56.38 \\ +\ 24.70 \\ \hline 81.08 \\ {}_{1}\ \ {}_{1} \end{array}$$

81.08

1 mark

10

$$\boxed{308} - 10 = 298$$

```
    2 9 8
  +   1 0
    3 0 8
    1
```

11

$270 \div 3 =$

```
    0 9 0
  3 2 ²7 0
```

$\boxed{90}$

12

$5,400 \div 9 =$

```
    0 6 0 0
  9 5 ⁵4 0 0
```

$\boxed{600}$

13 $60 \div 15 =$

$$15\overline{)6^40}$$

1 5	₁
3 0	₂
4 5	₃
6 0	₄

$$\boxed{4}$$

14 $\boxed{4921} = 5{,}776 - 855$

$$\begin{array}{r} 5\overset{4}{7}76 \\ -855 \\ \hline 4921 \end{array}$$

15 $3{,}050{,}020 = 3{,}000{,}000 + \boxed{50{,}000} + 20$

$$\begin{array}{r} 3\,000\,000 \\ 50\,000 \\ 20 \end{array}$$

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16 $10 - 5.4 =$

$$\begin{array}{r} {}^0{}^9 \\ \cancel{1}\cancel{0}\cdot{}^10 \\ -\quad 5\cdot 4 \\ \hline 4\cdot 6 \end{array}$$

$\boxed{4\cdot 6}$

1 mark

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

$\frac{5^{\times 3}}{7^{\times 3}} + \frac{3}{21}$

$\frac{15}{21} + \frac{3}{21} = \frac{18}{21} = \frac{6}{7}$

Find a common denominator eg 21

$\boxed{\dfrac{6}{7}}$

1 mark

18 $0.1 \div 100 =$

$0 . 1$

$0 \cdot 0 0 1$

When dividing by 100 move each digit 2 places to the right

$\boxed{0\cdot 001}$

1 mark

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

```
      0 2 5 0
    4 ⎯⎯⎯⎯⎯
      1 0 0 0

        2 5 0
    ×       3
      ⎯⎯⎯⎯⎯
        7 5 0
```

750

1 mark

20

Show your method

```
        7 8 5
    ×     2 3
    ⎯⎯⎯⎯⎯⎯⎯
      2 3 5 5
    1 5 7 0 0
    ⎯⎯⎯⎯⎯⎯⎯
    1 8 0 5 5
```

18055

2 marks

21

20% of 1,200 =

10% of 1200 = 120

20% = 2 × 120 = 240

240

22

Show your method

```
       1 5
4 3 | 6 4 5
  -  4 3
     2 1 5
  -  2 1 5
         0
```

```
    4 3 ₁
    8 6 ₂
  1 2 9 ₃
  1 7 2 ₄
  2 1 5 ₅
  ₁
```

15

23 $0.5 \times 28 =$

$0 \cdot 5 = \frac{1}{2}$

$\frac{1}{2} \times 28 = 14$

$\boxed{14}$

1 mark

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

Find a common
denominator e.g. 10

$\frac{1^{\times 5}}{2^{\times 5}} + \frac{1^{\times 2}}{5^{\times 2}}$

$\frac{5}{10} + \frac{2}{10} = \frac{7}{10}$

$\boxed{\dfrac{7}{10}}$

1 mark

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

$1\frac{3}{4} + \frac{3}{4} = 1\frac{6}{4} = 2\frac{2}{4} = 2\frac{1}{2}$

$\boxed{2\frac{1}{2}}$

1 mark

26 $6 - 5.738 =$

$$
\begin{array}{r}
599 \\
\not{6}.\not{0}\not{0}0 \\
-\ 5.738 \\
\hline
0.262 \\
\hline
\end{array}
$$

0.262

27 $3.9 \times 30 =$

$3.9 \times 10 = 39$

$$
\begin{array}{r}
39 \\
\times\ \ 3 \\
\hline
117 \\
{\scriptstyle 2}
\end{array}
$$

117

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

Find a common denominator eg 1 5

$1\frac{1}{15} - \frac{2^{\times 3}}{5^{\times 3}}$

$1\frac{1}{15} - \frac{6}{15} \rightarrow \frac{16}{15} - \frac{6}{15} = \frac{10}{15} = \frac{2}{3}$

Convert to an improper fraction

$\boxed{\dfrac{2}{3}}$

29

$$\begin{array}{r} 5\ 4\ 1\ 3 \\ \times\quad\ \ 8\ 6 \\ \hline 3\ 2\ 4\ 7\ 8 \\ 4\ 3\ 3\ 0\ 4\ 0 \\ \hline 4\ 6\ 5\ 5\ 1\ 8 \\ \hline \end{array}$$

Remember to use a place holder

Show your method

$\boxed{465518}$

30 99% of 200 =

99% of 100 = 99

$$\begin{array}{r} 99 \\ \times\ 2 \\ \hline 198 \end{array}$$

198

1 mark

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

$\frac{1}{4} \div 2$

$\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$

$\frac{1}{8}$

1 mark

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

$9^2 = 9 \times 9 = 81$

$36 \div 9 = 4$

$81 - 4 = 77$

BODMAS

Remember to use the order of operations

77

1 mark

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

$1 \times 40 = 40$

$\frac{1}{2} \times 40 = 20$

$1\frac{1}{2} \times 40 = 60$

| 60 |

1 mark

34 28% of 650 =

$10\% \text{ of } 650 = 65$ $+$ 130
$1\% \text{ of } 650 = 6 \cdot 5$ 52
                                         182

```
  65          6 . 5
x  2        x     8
 130         52 . 0
  1            4
```

| 182 |

1 mark

35

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

$4\frac{2^{\times 7}}{3^{\times 7}} - 1\frac{6^{\times 3}}{7^{\times 3}}$

Find a common denominator

e.g 21

$\begin{array}{r} 9\,{}^{8}\!\!8 \\ -\ 3\ 9 \\ \hline 5\ 9 \end{array}$

$4\frac{14}{21} - 1\frac{18}{21} \Rightarrow \frac{98}{21} - \frac{39}{21} = \frac{59}{21}$

$\boxed{\dfrac{59}{21} \text{ or } 2\dfrac{17}{21}}$

1 mark

36

Show your method

$\begin{array}{r} \quad\;\; 9\;1 \\ 9\,7\,|\,8\,8\,2\,7 \\ -\ \ 8\,7\,3 \\ \hline 0\ 0\ 9\ 7 \\ -\quad\ 9\ 7 \\ \hline 0 \end{array}$

9	7		'
1	9	4	2
2	9	1	3
3	8	8	4
4	8	5	5
5	8	2	6
6	7	9	7
7	7	6	8
8	7	3	9
9	7	0	10

$\boxed{91}$

2 marks

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