YSGOL CREUDDYN

DAWN DYSG DAIONI

The Mathematics Department

11

The Calculation Guide

Name:

Contents

The purpose of this workbook is to develop and exercise your calculation skills.

The first part of the workbook (pages 3–13) contains the **library of techniques**, showing how to complete calculations involving…

- Addition
- Subtraction
- Multiplication
- Division
- Percentages

The second part of the workbook (pages 14–38) contains 25 exercise sheets.

Exercise 1

(1) 14 + 23 + 10 + 28 Mark: ___ / 1 **A1**	(2) 532 × 4 Mark: ___ / 1 **M2**	(3) What is 10% of £65? Mark: ___ / 1 **P1**
(4) 725 – 487 Mark: ___ / 1 **S2**	(5) $\frac{3}{4} \times 20$ Mark: ___ / 1 **M10**	(6) 6 ÷ 0.5 Mark: ___ / 1 **D5**
(7) What is 73% of £92? Mark: ___ / 1 **A4**	(8) 320,000 ÷ 4,000 Mark: ___ / 2 **D7**	(9) 1 hour 30 minutes + 2 hours 45 minutes Mark: ___ / 2 **M12**
(10) 7.8 × 60 Mark: ___ / 2 **M6**	(11) $\frac{42}{240} \times 40$ Mark: ___ / 3 **P2**	

A sum to complete.

Space to answer the question.

How many marks the question is worth.

The location of this type of sum in the *library of techniques*.

Library of Techniques

Addition

A1	*Mentally adding numbers*

32 + 16 + 24

$= 72$

32 → 38 → 48 → 52 → 72

OR

60 + 12 = 72

A2	*Adding in a column*

4235 + 739

$$\begin{array}{r} 4235 \\ +\ 739 \\ \hline 4974 \\ \hline {\scriptstyle 1} \end{array}$$

Setting out: units under units, tens under tens etc. Start from the right. Carry over as required.

A3	*Adding decimals*

43.94 + 2.736

$$\begin{array}{r} 43.94 \\ +\ 2.736 \\ \hline 46.676 \\ \hline {\scriptstyle 1} \end{array}$$

Make sure that the decimal points are underneath each other. Start from the right. Carry over as required.

A4	*Adding time*

3 hours 25 minutes + 2 hours 53 minutes

3 + 2 = 5, 25 + 53 = 78

5 hours 78 minutes

= 6 hours 18 minutes

Add the hours and minutes separately to begin with. Only 60 minutes in an hour so we need to do 78 − 60 = 18.

A5 *Adding fractions (equal denominators)*

$\frac{3}{8} + \frac{1}{8}$

$\frac{3}{8} + \frac{1}{8} = \frac{4}{8}$

$= \frac{1}{2}$

A6 *Adding fractions (different denominators)*

$\frac{2}{5} + \frac{3}{4}$

$\frac{2}{5} + \frac{3}{4} = \frac{8}{20} + \frac{15}{20}$

$= \frac{23}{20}$

$= 1\frac{3}{20}$

+	2	5
3	X	15
4	8	20

$\frac{23}{20} = 1\frac{3}{20}$

A7 *Adding a negative number*

12 + –5

$= 12 - 5$

$= 7$

Add the two numerators (tops), keep the denominator (bottom) the same. Simplify the answer, if possible.

Method ①: The traditional method. Write the fractions over a common denominator (the smallest multiple of 5 and 4) before adding the fractions.
Change the top-heavy fraction to a mixed number.

Method ②: The peanut method. Fill the table by multiplying before adding the numbers in the 'peanut'. Change the top-heavy fraction to a mixed number.

Adding a negative number is the same as subtracting.

Subtraction

S1	*Mentally subtracting numbers*

78 – 3 – 12

= 63

78 → 75 → 65 → 63
OR
78 − 15 = 63

S2	*Subtracting in a column*

325 – 143

$$\begin{array}{r} {}^{2}\not{3}\,{}^{1}25 \\ -\ 1\ 4\ 3 \\ \hline 1\ 8\ 2 \end{array}$$

Setting out: units under units, tens under tens etc. start from the right. 'Borrow' from the next column to the left, as required.

S3	*Subtracting decimals*

87.2 – 4.68

$$\begin{array}{r} {}^{7}\not{8}\,{}^{1}\not{7}.{}^{1}\not{2}\,{}^{1}0 \\ -\quad 4.6\ 8 \\ \hline 8\ 2.5\ 2 \end{array}$$

Make sure that the decimal points are underneath each other. Add the 0 to begin. The decimal point in the answer is in the same position.

S4	*Subtracting time*

3 hours 20 minutes – 1 hour 35 minutes

3 hours 20 minutes
2 hours 20 minutes
2 hours
1 hour 45 minutes

Subtract 1 hour
Subtract 20 minutes } 20 + 15 = 35
Subtract 15 minutes }

S5	*Subtracting fractions (equal denominators)*

$\frac{7}{8} - \frac{3}{8}$

$\frac{7}{8} - \frac{3}{8} = \frac{4}{8}$

$= \frac{1}{2}$

Subtract the two numerators (tops), keep the denominator (bottom) the same. Simplify the answer, if possible.

S6	*Subtracting fractions (different denominators)*

$\frac{4}{5} - \frac{1}{10}$

$\frac{4}{5} - \frac{1}{10} = \frac{8}{10} - \frac{1}{10}$

$= \frac{7}{10}$

Method ①: The traditional method. Write the fractions over a common denominator (the smallest multiple of 5 and 10) before subtracting the fractions.

−	4	5
1	~~4~~	5
10	40	50

$\frac{3}{5} \quad \frac{5}{0}$

$= \frac{7}{10}$

Method ②: The peanut method. Fill the table by multiplying before subtracting the numbers in the 'peanut'. Simplify the answer.

S7	*Subtracting a negative number*

$12 - -5$

$= 12 + 5$

$= 17$

Subtracting a negative number is the same as addition.

Multiplication

M1	*Mentally multiplying numbers*

4 × 5 = 20

7 × 3 = 21

6 × 9 = 54

It is useful to be able to fluently remember multiplication facts such as these.

M2	*Multiplying by a whole number less than 10*

427 × 6

$$\begin{array}{r} 427 \\ \times \quad 6 \\ \hline 2562 \\ \hline 14 \end{array}$$

Work from right to left. Carry over as required.

M3	*Multiplying quickly by 5*

64 × 5

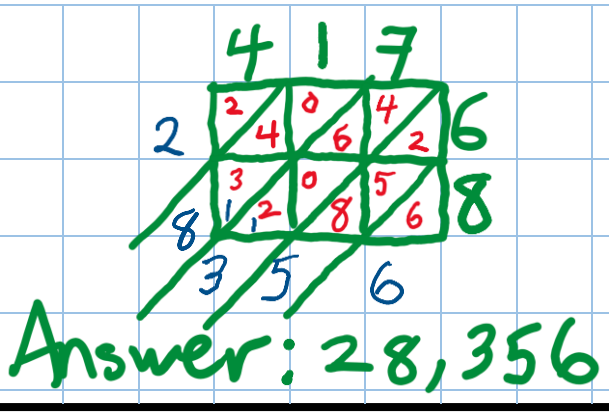
64 × 10 = 640

640 ÷ 2 = 320

To multiply quickly by 5, multiply first by 10 and then halve.

M4	*Multiplying whole numbers using the grid method*

417 × 68



Answer: 28,356

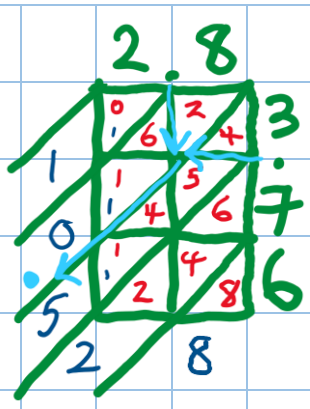
Step 1: Set out the sum using a grid.

Step 2: Fill the grid by multiplying the digits on top by the digits on the right.

Step 3: Add the diagonals starting at the bottom right.

M5	*Multiplying decimals using the grid method*

2.8 × 3.76



Ateb: 10.528

Use the same method as above (M4) to begin with.

To obtain the location of the decimal point in the answer, find where the two decimal points in the question meet and then travel along a diagonal.

M6	*Multiplying using factoring*

4.2 × 20

$= 4.2 \times 10 \times 2$

$= 42 \times 2$

$= 84$

We factorise 20 as 10 x 2 to split the original sum into two easier sums.

M7	*Powers*

3^4

$= 3 \times 3 \times 3 \times 3$

$= 9 \times 3 \times 3$

$= 27 \times 3$

$= 81$

$$\begin{array}{r} 27 \\ \times\ \ 3 \\ \hline 81 \\ \hline 2 \end{array}$$

Alternative method:

$3 \times 3 \times 3 \times 3$

$= 9 \times 9$

$= 81$

M8	*Multiplying large numbers*

4000 × 500

$4 \times 5 = 20$

4000×500

$= 20000000$

$= 2,000,000$

Begin by multiplying the digits that are not zero. There are 5 zeroes in the question, so the answer also requires 5 zeroes.

M9	*Multiplying two fractions*

$\frac{3}{5} \times \frac{2}{3}$

$\frac{3}{5} \times \frac{2}{3} = \frac{6}{15}$

$= \frac{2}{5}$

Begin by multiplying the numerators (tops) and denominators (bottoms). Then, if possible, simplify the answer.

M10	*Multiplying by a fraction*

$\frac{3}{4} \times 8$

$8 \div 4 = 2$

$2 \times 3 = 6$

Step ①: Divide by the denominator (find $\frac{1}{4}$).
Step ②: Multiply by the numerator (find $\frac{3}{4}$).

M11	*Multiplying by a fraction: simplifying*

$\frac{30}{240} \times 32$

$\frac{30}{240} \times 32 = \frac{3}{24} \times 32$

$= \frac{1}{8} \times 32$

$= 32 \div 8$

$= 4$

Simplify the fraction by dividing top and bottom by 10. Simplify the fraction by dividing top and bottom by 3. Calculate $\frac{1}{8}$ of 32 by dividing 32 by 8.

M12	*Multiplying by a fraction: commutativity*

$\frac{17}{240} \times 60$

$\frac{17}{240} \times 60 = \frac{60}{240} \times 17$

$= \frac{6}{24} \times 17$

$= \frac{1}{4} \times 17$

$= 4.25$

Use the commutativity of multiplication ($ab = ba$) to obtain a fraction that can be simplified.
Simplify the fraction by dividing top and bottom by 10.
Simplify the fraction by dividing top and bottom by 6.
Divide 17 by 4 by halving twice.

M13	*Multiplying by a fraction: equivalent fractions*

$\frac{120}{250} \times 300$

$\frac{120}{250} \times 300 = \frac{12}{25} \times 300$

$= \frac{48}{100} \times 300$

$= 3 \times 48$

$= 144$

$48 \times 3 = 144$

Simplify the fraction by dividing top and bottom by 10.
Form an equivalent fraction by multiplying top and bottom by 4.
Calculate $300 \div 100 = 3$.
Calculate $3 \times 48 = 144$.

Division

D1	*Mentally dividing numbers*
24 ÷ 3 = 8	
25 ÷ 5 = 5	
42 ÷ 6 = 7	

24 ÷ 3 = 8 because 8 × 3 = 24.

D2	*Division frame: no remainder*

4236 ÷ 3

$$3\overline{)4^{1}2^{1}3^{2}6} = 1412$$

Setting out: the number to be divided (the dividend) inside; the number to divide by (the divisor) outside. Work from left to right.

D3	*Division frame: with a remainder*

6328 ÷ 5

$$5\overline{)6^{1}3^{3}2^{2}8} = 1265\text{r}3$$

1st question: 'How many times does 5 fit into 6?' Answer: 1 time, with remainder 1. 2nd question: 'How many times does 5 fit into 13?' ....

D4	*Division frame: decimal answer*

2763 ÷ 4

$$4\overline{)2^{2}7^{3}6\,3.^{3}0^{2}0} = 690.75$$

Add the .00 to the 2763 to write the answer as a decimal.

D5	*Dividing by a decimal*

3 ÷ 0.25

$$= 3 \times 4$$
$$= 12$$

0.25 fits into 1 four times so dividing by 0.25 is the same as multiplying by 4.

D6	*Dividing by a decimal using an equivalent fraction*

30 ÷ 1.2

$= \frac{30}{1.2}$

$= \frac{300}{12}$

$= \frac{150}{6}$

$= \frac{50}{2}$

$= 25$

Write the division sum as a fraction.
Multiply top and bottom by 10.

Divide top and bottom by 2.

Divide top and bottom by 3.

Half of 50 is 25.

D7	*Division by cancelling*

3600 ÷ 400

$= \frac{3600}{400}$

$= \frac{36}{4}$

$= 9$

Change the division sum to be a fraction and then cancel pairs of zeroes (one on the top, one on the bottom). Calculate 36 ÷ 4 = 9.

D8	*Dividing fractions*

$\frac{2}{5} \div \frac{3}{7}$

$= \frac{2}{5} \times \frac{7}{3}$

$= \frac{14}{15}$

Dividing by a fraction is the same as multiplying by the fraction's reciprocal.
- Do not change the 1st fraction.
- Change the ÷ sum to a × sum.
- Take the reciprocal of the 2nd fraction.

Percentages

P1 *Percentage of a number (easy)*

What is 20% of £60?

10% £60 ÷ 10 = £6

20% £6 × 2 = £12

Find 10% by dividing by 10. Double the 10% to get 20%.

P2 *Percentage of a number (medium)*

What is 38% of £84?

10% £84 ÷ 10 = £8.40

1% £8.40 ÷ 10 = £0.84

30% 8%

8.40 × 3 = 25.20

0.84 × 8 = 6.72

25.20 + 6.72 = £31.92 (38%)

Find 10% by dividing by 10. Divide by 10 again. Find 30% by multiplying the 10% by 3, and find 8% by multiplying the 1% by 8.

Find 38% by adding the 30% to the 8%.

P3 *Percentage of a number (hard)*

What is 0.02% of 63?

10% 6.3

1% 0.63

0.1% 0.063

0.01% 0.0063

0.02%

0.0063 × 2 = 0.0126

Find 0.01% by dividing by 10 four times, then double to obtain the 0.02%.

Exercise 1

(1) 14 + 23 + 10 + 28

Mark: ___ / 1 **A1**

(2) 532 × 4

Mark: ___ / 1 **M2**

(3) What is 10% of £65?

Mark: ___ / 1 **P1**

(4) 725 – 487

Mark: ___ / 1 **S2**

(5) $\frac{3}{4} \times 20$

Mark: ___ / 1 **M10**

(6) 6 ÷ 0.5

Mark: ___ / 1 **D5**

(7) What is 73% of £92?

Mark: ___ / 3 **P2**

(8) 320,000 ÷ 4,000

Mark: ___ / 2 **D7**

(9) 1 hour 30 minutes
+ 2 hours 45 minutes

Mark: ___ / 1 **A4**

(10) 7.8 × 60

Mark: ___ / 2 **M6**

(11) $\frac{42}{240} \times 40$

Mark: ___ / 2 **M12**

Exercise 2

(1) 64 – 5 – 13

Mark: ___ / 1 **S1**

(2)

5 × 4 =

9 × 6 =

7 × 5 =

8 × 8 =

3 × 12 =

Mark: ___ / 5 **M1**

(3) 523 + 8,621

Mark: ___ / 1 **A2**

(4) 6^3

Mark: ___ / 1 **M7**

(5) 7 – –4

Mark: ___ / 1 **S7**

(6) $\frac{2}{7} \div \frac{4}{5}$

Mark: ___ / 2 **D8**

(7) What is 0.3% of £90?

Mark: ___ / 2 **P3**

(8) $\frac{20}{100} \times 30$

Mark: ___ / 2 **M11**

(9) 2,556 ÷ 6

Mark: ___ / 1 **D2**

(10) $\frac{5}{12} + \frac{1}{12}$

Mark: ___ / 2 **A5**

(11) 1 ÷ 8

Mark: ___ / 1 **D4**

(12) 86 × 5

Mark: ___ / 1 **M3**

Exercise 3

(1)

1	5	÷	5	=	
2	1	÷	3	=	
6	4	÷	8	=	
2	4	÷	2	=	
3	6	÷	4	=	

Mark: ___ / 5 **D1**

(2) What is 10% of $64?

Mark: ___ / 1 **P1**

(3) 283 × 49

Mark: ___ / 2 **M4**

(4) 2 hours 30 minutes – 1 hour 40 minutes

Mark: ___ / 1 **S4**

(5) 14,400,000,000 ÷ 7,200,000,000

Mark: ___ / 2 **D7**

(6) 5.28 + 72.063

Mark: ___ / 1 **A3**

(7) 8 + –2

Mark: ___ / 1 **A7**

(8) $\frac{3}{50} \times 70$

Mark: ___ / 2 **M13**

(9) $\frac{3}{5} + \frac{7}{8}$

Mark: ___ / 2 **A6**

(10) $\frac{3}{5} \times \frac{7}{8}$

Mark: ___ / 1 **M9**

Exercise 4

(1) 30×40

Mark: ___ / 1 **M8**

(2) $42 + 9 + 21$

Mark: ___ / 1 **A1**

(3) 56×7

Mark: ___ / 1 **M2**

(4) $34.6 - 2.75$

(5) 5.23×7.4

Mark: ___ / 2 **M5**

(6) $4.9 \div 1.4$

Mark: ___ / 1 **S3**

(7) $\frac{7}{9} - \frac{5}{8}$

Mark: ___ / 2 **S6**

(8) $\frac{7}{9} - \frac{4}{9}$

Mark: ___ / 2 **S5**

(9) 74×36

Mark: ___ / 1 **D6**

(10) $534 + 8{,}723 + 94$

Mark: ___ / 1 **A2**

(11) $1{,}387 \div 3$

Mark: ___ / 1 **D3**

Mark: ___ / 2 **M4**

Exercise 5

(1)

4	×	7	=		
3	×	9	=		
6	×	6	=		
5	×	8	=		
2	×	3	=		

Mark: ___ / 5 **M1**

(2) 782 – 347

Mark: ___ / 1 **S2**

(3) What is 50% of £62?

Mark: ___ / 1 **P1**

(4) 758 ÷ 2

Mark: ___ / 1 **D2**

(5) $\frac{4}{24} \times 42$

Mark: ___ / 2 **M11**

(6) 5 ÷ 0.2

Mark: ___ / 1 **D5**

(7) 2^5

Mark: ___ / 1 **M7**

(8) 4 hours 20 minutes
+ 3 hours 50 minutes

Mark: ___ / 1 **A4**

(9) What is 43% of £140?

Mark: ___ / 2 **P2**

(10) 8 – –7

Mark: ___ / 1 **S7**

(11) 2.1 × 30

Mark: ___ / 1 **M6**

Exercise 6

(1) 87 – 3 – 14

Mark: ___ / 1 **S1**

(2) 813 × 4

Mark: ___ / 1 **M2**

(3) 97 + 2872 + 390

Mark: ___ / 1 **A2**

(4) 2608 ÷ 5

Mark: ___ / 1 **D3**

(5) 4.3 + 72.84 + 9.7

Mark: ___ / 1 **A3**

(6) 5^4

(7) 5 hours 23 minutes
– 2 hours 47 minutes

Mark: ___ / 1 **S4**

(8) $\frac{11}{20} \times 10$

Mark: ___ / 2 **M12**

(9) 5.7 × 2.6

Mark: ___ / 2 **M5**

(10) 8 + –2

Mark: ___ / 1 **A7**

Exercise 7

(1)

2	4	÷	4	=	
4	5	÷	9	=	
1	2	÷	3	=	
1	8	÷	2	=	
4	9	÷	7	=	

Mark: ___ / 5 **D1**

(2) $\frac{2}{9} + \frac{4}{9}$

Mark: ___ / 1 **A5**

(3) 43 × 5

Mark: ___ / 1 **M3**

(4) 5.2 – 2.67

Mark: ___ / 1 **S3**

(5) 8,000 × 50,000

Mark: ___ / 1 **M8**

(6) What is 2.03% of £1,800?

Mark: ___ / 2 **P3**

(7) 84,000,000,000 ÷ 20,000,000

Mark: ___ / 1 **D7**

(8) 34 ÷ 8

Mark: ___ / 1 **D4**

(9) $\frac{2}{7} \times \frac{3}{4}$

Mark: ___ / 2 **M9**

(10) 8 – –1

Mark: ___ / 1 **S7**

Exercise 8

(1) What is 25% of £60?

Mark: ___ / 1 **P1**

(2) $\frac{1}{2} \times 15$

Mark: ___ / 1 **M10**

(3) 8^2

Mark: ___ / 1 **M7**

(4) $15 \div 0.5$

(5) $9 \div 0.6$

(6) $\frac{1}{7} + \frac{3}{5}$

Mark: ___ / 2 **A6**

Mark: ___ / 1 **D5**

(7) 835×62

Mark: ___ / 2 **D6**

(8) $30 - 11.24$

Mark: ___ / 1 **S3**

(9) $\frac{3}{50} \times 7$

Mark: ___ / 2 **M4**

(10) 4.8×20

Mark: ___ / 1 **M6**

(11) $95 + 17$

Mark: ___ / 1 **A1**

Mark: ___ / 2 **M13**

Exercise 9

(1) 1 hour 10 minutes – 33 minutes

Mark: ___ / 1 **S4**

(2) $\frac{7}{9} - \frac{2}{9}$

Mark: ___ / 1 **S5**

(3) 204 – 7

Mark: ___ / 1 **S1**

(4) $\frac{2}{5} \div \frac{2}{9}$

Mark: ___ / 2 **D8**

(5) 8.3 + 16 + 0.02

Mark: ___ / 1 **A3**

(6) What is 82% of $180?

(7) 204 × 5

Mark: ___ / 1 **M3**

(8) 83.2 × 4.7

Mark: ___ / 2 **M5**

(9) 7,209 × 8

Mark: ___ / 1 **M2**

(10) 3,801 ÷ 7

Mark: ___ / 2 **P2**

Mark: ___ / 1 **D2**

Exercise 10

(1)

4	×	6	=	
7	×	4	=	
9	×	3	=	
5	×	8	=	
4	×	2	=	

Mark: ___ / 5 **M1**

(2) $\frac{4}{5} \times 35$

Mark: ___ / 1 **M10**

(3) 8,923 – 2,478

Mark: ___ / 1 **S2**

(4) $\frac{7}{10} - \frac{2}{5}$

Mark: ___ / 2 **S6**

(5) 380 ÷ 9

Mark: ___ / 1 **D3**

(6) 16 + – 7

Mark: ___ / 1 **A7**

(7) 1,400,000 × 200,000,000

Mark: ___ / 1 **M8**

(8) $\frac{15}{28} \times 14$

Mark: ___ / 2 **M12**

(9) $\frac{5}{6} \times \frac{2}{3}$

Mark: ___ / 2 **M9**

(10) $\frac{5}{14} + \frac{2}{14}$

Mark: ___ / 2 **A5**

(11) 9 ÷ 0.1

Mark: ___ / 1 **D5**

Exercise 11

(1)

4	8	÷	8	=	
5	6	÷	7	=	
1	8	÷	6	=	
5	0	÷	5	=	
2	8	÷	4	=	

Mark: ___ / 5 **D1**

(2) 7 hours 20 minutes + 3 hours 45 minutes

Mark: ___ / 1 **A4**

(3) $18 - -5$

Mark: ___ / 1 **S7**

(4) $\frac{24}{72} \times 15$

(5) What is 1.25% of £80?

(6) $23 \div 8$

Mark: ___ / 2 **D4**

(7) $\frac{3}{4} + \frac{7}{12}$

Mark: ___ / 2 **A6**

Mark: ___ / 2 **P3**

(8) $\frac{3}{4} \div \frac{7}{12}$

Mark: ___ / 2 **D8**

Mark: ___ / 2 **M11**

(9) $\frac{3}{125} \times 2000$

Mark: ___ / 2 **M13**

Exercise 12

(1) 4 + 8 + 7 + 3 + 9 + 2

Mark: ___ / 1 **A1**

(2) $\frac{6}{7} - \frac{1}{7}$

Mark: ___ / 1 **S5**

(3) What is 20% of 5?

Mark: ___ / 1 **P1**

(4) 15 ÷ 2.5

Mark: ___ / 1 **D6**

(5) 6^3

Mark: ___ / 1 **M7**

(6) 739 × 8

Mark: ___ / 1 **M2**

(7) 73.4 – 4.69

Mark: ___ / 1 **S3**

(8) $\frac{5}{8} \times \frac{3}{5}$

Mark: ___ / 2 **M9**

(9) 91,792 ÷ 2

Mark: ___ / 1 **D2**

(10) 2,347 + 430

Mark: ___ / 1 **A2**

(11) 4 ÷ 0.5

Mark: ___ / 1 **D5**

(12) 35 minutes
+ 47 minutes

Mark: ___ / 1 **A4**

Exercise 13

(1)

3	×	9	=		
4	×	0	=		
5	×	6	=		
6	×	7	=		
7	×	5	=		

Mark: ___ / 5 **M1**

(2) 4.5 + 12.3 + 3.8

Mark: ___ / 1 **A3**

(3) 8,704 – 2,338

Mark: ___ / 1 **S2**

(4) $\frac{9}{10} - \frac{1}{2}$

(5) 86 ÷ 5

Mark: ___ / 1 **D3**

(6) 86 ÷ 5

Mark: ___ / 1 **D4**

(7) 50 × 15

Mark: ___ / 1 **M6**

(8) What is 73% of 190?

Mark: ___ / 2 **S6**

(9) 6,207 × 358

Mark: ___ / 2 **M4**

(10) $\frac{2}{5} \times £45$

Mark: ___ / 1 **M10**

Mark: ___ / 2 **P2**

Exercise 14

(1) 73 – 5 – 3 – 10 – 6

Mark: ___ / 1 **S1**

(2) 72 × 5

Mark: ___ / 1 **M3**

(3) 3 hours 30 minutes – 1 hour 45 minutes

Mark: ___ / 1 **S4**

(4) 66 ÷ 2.2

Mark: ___ / 1 **D6**

(5) $\frac{4}{5} \div \frac{10}{11}$

Mark: ___ / 2 **D8**

(6) $\frac{3}{10} + \frac{5}{10}$

Mark: ___ / 2 **A5**

(7) 8,000 × 40,000

Mark: ___ / 1 **M8**

(8) What is 1.3% of £450?

(9) 23.5 × 47

Mark: ___ / 2 **M5**

(10) $\frac{3}{4} + \frac{5}{12}$

Mark: ___ / 2 **A6**

Mark: ___ / 2 **P3**

Exercise 15

(1)

3	6	÷	6	=	
2	4	÷	3	=	
1	6	÷	2	=	
4	2	÷	7	=	
7	2	÷	8	=	

Mark: ___ / 5 **D1**

(6) $\frac{16}{25} \times 50$

Mark: ___ / 2 **M12**

(10) 2^6

Mark: ___ / 1 **M7**

(2) 8,000 ÷ 400

Mark: ___ / 1 **D7**

(5) 23 + –7

Mark: ___ / 1 **A7**

(8) $\frac{16}{32} \times 50$

Mark: ___ / 2 **M11**

(11) 336 ÷ 7

Mark: ___ / 1 **D2**

(3) $\frac{4}{7} - \frac{1}{7}$

Mark: ___ / 1 **S5**

(4) $\frac{5}{7} \times £42$

Mark: ___ / 1 **M10**

(7) 23 – –7

Mark: ___ / 1 **S7**

(9) 83 + 9,402 + 456

Mark: ___ / 1 **A2**

(12) What is 50% of £25?

Mark: ___ / 1 **P1**

Exercise 16

(1)

6	×	2	=		
3	×	3	=		
4	×	8	=		
9	×	4	=		
7	×	1	=		

Mark: ___ / 5 **M1**

(2) 927 – 263

Mark: ___ / 1 **S2**

(3) 6319 × 8

Mark: ___ / 1 **M2**

(4) 1,800,000,000 ÷ 90,000,000

(5) What is 62% of £128?

Mark: ___ / 1 **D7**

(6) $\frac{7}{25} \times 900$

Mark: ___ / 2 **M13**

(7) 5 hours 20 minutes
– 3 hours 42 minutes

Mark: ___ / 1 **S4**

(8) 3 ÷ 0.25

(9) 10^2

Mark: ___ / 2 **P2**

Mark: ___ / 1 **M7**

Mark: ___ / 1 **D5**

Exercise 17

(1) 2 + 7 + 14 + 4 + 10

Mark: ___ / 1 **A1**

(2) 52 × 5

Mark: ___ / 1 **M3**

(3) $\frac{12}{13} - \frac{7}{13}$

Mark: ___ / 1 **S5**

(4) 9.2 × 40

Mark: ___ / 1 **M6**

(5) 255 ÷ 6

Mark: ___ / 1 **D4**

(6) $\frac{4}{3} \times \frac{2}{9}$

Mark: ___ / 1 **M9**

(7) 82.4 + 0.32 + 9.298

Mark: ___ / 1 **A3**

(8) 70,000 × 300,000

Mark: ___ / 1 **M8**

(9) 4.7 × 285.7

Mark: ___ / 2 **M5**

(10) $\frac{5}{6} + \frac{2}{3}$

Mark: ___ / 2 **A6**

(11) 32.1 – 4.65

(12) 18 + –5

Mark: ___ / 1 **A7**

Mark: ___ / 1 **S3**

Exercise 18

(1)

4	2	÷	7	=	
8	1	÷	9	=	
2	0	÷	4	=	
1	4	÷	1	=	
3	6	÷	3	=	

Mark: ___ / 5 **D1**

(6) What is 27.52% of £900?

Mark: ___ / 2 **P3**

(2) 43 minutes after 2:40 pm

Mark: ___ / 1 **A4**

(4) 83 × 26

(7) $\frac{2}{7} \div \frac{4}{5}$

Mark: ___ / 2 **M4**

(9) 7 – –3 – –9

Mark: ___ / 2 **D8**

(10) 85 ÷ 100

Mark: ___ / 1 **S7**

(3) 1300 ÷ 4

Mark: ___ / 1 **D2**

(5) $\frac{34}{68} \times 12$

Mark: ___ / 2 **M11**

(8) $\frac{11}{20} \times 2$

Mark: ___ / 2 **M12**

Mark: ___ / 1 **D1**

Exercise 19

(1) 82 – 4 – 3 – 1

Mark: ___ / 1 **S1**

(2) $\frac{4}{15} + \frac{1}{15}$

Mark: ___ / 2 **A6**

(3) 54 × 9

Mark: ___ / 1 **M2**

(4) 7.5 ÷ 2.5

Mark: ___ / 1 **D6**

(5) $\frac{9}{10} - \frac{1}{2}$

Mark: ___ / 1 **P1**

(6) 34289 + 87943

Mark: ___ / 1 **A2**

(7) What is 10% of €9.80?

Mark: ___ / 1 **M7**

(8) 12,849 ÷ 3

Mark: ___ / 2 **S6**

(9) $\frac{5}{8} \times £48$

Mark: ___ / 1 **M10**

(10) 230 × 5

Mark: ___ / 1 **D2**

(11) $\frac{1}{8} \div \frac{1}{7}$

Mark: ___ / 1 **M3**

(12) 1^3

Mark: ___ / 1 **A7**

(13) 10 + –12

Mark: ___ / 2 **D8**

Exercise 20

(1)

2	×	3	=		
4	×	6	=		
8	×	5	=		
3	×	9	=		
6	×	7	=		
10	×	5	=		
5	×	0	=		
8	×	1	=		
7	×	8	=		
12	×	9	=		

Mark: ___ / 10 **M1**

(2) 723 – 258

Mark: ___ / 1 **S2**

(3) 423 ÷ 5

Mark: ___ / 1 **D3**

(4) $\frac{3}{20} + \frac{11}{20}$

Mark: ___ / 2 **A5**

(5) What is 93% of £2,750?

Mark: ___ / 2 **M4**

(6) 802 × 53

Mark: ___ / 2 **P2**

(7) 32.7 + 28.4 + 52.9

Mark: ___ / 1 **A3**

(8) –5 – –8

Mark: ___ / 1 **S7**

(9) 6.23 × 10

Mark: ___ / 1 **M1**

Exercise 21

(1) 40 + 70 + 30

Mark: ___ / 1 **A1**

(2) 7 ÷ 0.5

Mark: ___ / 1 **D5**

(3) 8.4 × 50

Mark: ___ / 1 **M3, M6**

(4) $\frac{1}{6} + \frac{5}{6}$

Mark: ___ / 1 **A5**

(5) $\frac{1}{6} \times \frac{5}{6}$

Mark: ___ / 1 **M9**

(6) $\frac{1}{6} \div \frac{5}{6}$

Mark: ___ / 2 **M5**

(7) 288,000,000,000 ÷ 20,000,000

Mark: ___ / 1 **D7**

(8) 25.8 – 10.9

Mark: ___ / 1 **S3**

(9) 4 minutes 20 seconds + 7 minutes 54 seconds

Mark: ___ / 1 **A4**

(10) 5.2 × 7.3

Mark: ___ / 2 **D8**

(11) 17 ÷ 8

Mark: ___ / 1 **D4**

(12) 0.036 × 100

Mark: ___ / 1 **M1**

Exercise 22

(1)

1	2	÷	3	=	
	8	÷	2	=	
3	9	÷	3	=	
1	6	÷	4	=	
5	6	÷	8	=	

Mark: ___ / 5 **D1**

(6) What is 2.45% of £300?

Mark: ___ / 2 **P3**

(2) 400 × 30

Mark: ___ / 1 **M8**

(4) $\frac{5}{25} \times 120$

Mark: ___ / 2 **M11**

(8) $\frac{47}{50} \times 200$

Mark: ___ / 2 **M13**

(10) $\frac{4}{9} \times £72$

Mark: ___ / 1 **M10**

(3) 1 hour 10 minutes
– 36 minutes

Mark: ___ / 1 **S4**

(5) $\frac{7}{8} - \frac{1}{8}$

Mark: ___ / 2 **S5**

(7) $\frac{7}{8} - \frac{1}{4}$

Mark: ___ / 2 **S6**

(9) 827 + 9271

Mark: ___ / 1 **A2**

Exercise 23

(1) 45 – 12 – 3 – 6

Mark: ___ / 1 **S1**

(2) 279 × 7

Mark: ___ / 1 **M2**

(3) 72590 – 6284

Mark: ___ / 1 **S2**

(4) What is 30% of £40?

Mark: ___ / 1 **P1**

(5) $\frac{4}{5} \times \frac{8}{9}$

Mark: ___ / 1 **M9**

(6) 45 ÷ 1.5

Mark: ___ / 2 **D6**

(7) $\frac{7}{8} \times 4$

Mark: ___ / 2 **M12**

(8) 4293 × 5417

Mark: ___ / 2 **M4**

(9) $\frac{11}{12} - \frac{5}{6}$

Mark: ___ / 2 **S6**

(10) 4^4

Mark: ___ / 2 **M7**

(11) 458 ÷ 2

Mark: ___ / 1 **D2**

(12) –1 – –1

Mark: ___ / 1 **S7**

Exercise 24

(1) 32 + 7 + 8 + 9

Mark: ___ / 1 **A1**

(2) 3.2 – 1.28

Mark: ___ / 1 **S3**

(3) $\frac{1}{7} + \frac{2}{7} + \frac{3}{7}$

Mark: ___ / 1 **A5**

(4) 85 ÷ 3

Mark: ___ / 1 **D3**

(5) What is 36% of $75?

Mark: ___ / 1 **M6**

(6) 8 × 70

Mark: ___ / 1 **M6**

(7) $\frac{3}{2} + \frac{4}{3}$

Mark: ___ / 2 **A6**

(8) 703 × 821

Mark: ___ / 2 **M4**

(9) $\frac{2}{3} \div \frac{7}{8}$

Mark: ___ / 2 **D8**

(10) 9 + –2

Mark: ___ / 1 **A7**

(11) 5 ÷ 0.2

Mark: ___ / 1 **D5**

Exercise 25

(1)

1	5	÷	5	=	
2	7	÷	9	=	
2	4	÷	8	=	
2	1	÷	7	=	
1	8	÷	6	=	

Mark: ___ / 5 **D1**

(2) 48 + 2396 + 481

Mark: ___ / 1 **A2**

(3) $\frac{3}{11} + \frac{5}{11}$

Mark: ___ / 1 **A5**

(4) 3 ÷ 16

Mark: ___ / 1 **D4**

(5) 842 × 63

Mark: ___ / 2 **M4**

(6) 6293 – 837

Mark: ___ / 1 **S2**

(7) What is 75% of £60?

Mark: ___ / 1 **P1**

(8) $\frac{32}{80} \times \$15$

Mark: ___ / 2 **M11**

(9) $\frac{7}{12} - \frac{1}{3}$

Mark: ___ / 1 **S6**

(10)

9	×	7	=		
6	×	8	=		
11	×	5	=		
8	×	9	=		
4	×	12	=		
5	×	13	=		
7	×	8	=		

Mark: ___ / 7 **M1**

Answers

Exercise 1 (1) 75 (2) 2,128 (3) £6.50 (4) 238 (5) 15 (6) 12 (7) £67.16 (8) 80 (9) 4 hours 15 minutes (10) 468 (11) 7

Exercise 2 (1) 46 (2) 20, 54, 35, 64, 36 (3) 9,144 (4) 216 (5) 11 (6) $\frac{5}{14}$ (7) £0.27 (8) 6 (9) 426 (10) $\frac{1}{2}$ (11) 0.125 (12) 430

Exercise 3 (1) 3, 7, 8, 12, 9 (2) $6.40 (3) 13,867 (4) 50 minutes (5) 2 (6) 77.343 (7) 6 (8) 4.2 (9) $1\frac{19}{40}$ (10) $\frac{21}{40}$

Exercise 4 (1) 1,200 (2) 72 (3) 392 (4) 31.85 (5) 38.702 (6) 3.5 (7) $\frac{11}{72}$ (8) $\frac{1}{3}$ (9) 2,664 (10) 9,351 (11) 462 remainder 1

Exercise 5 (1) 28, 27, 36, 40, 6 (2) 435 (3) £31 (4) 379 (5) 7 (6) 25 (7) 32 (8) 8 hours 10 minutes (9) £60.20 (10) 15 (11) 63

Exercise 6 (1) 70 (2) 3,252 (3) 3,359 (4) 521 remainder 3 (5) 86.84 (6) 625 (7) 2 hours 36 minutes (8) 5.5 (9) 14.82 (10) 6

Exercise 7 (1) 6, 5, 4, 9, 7 (2) $\frac{2}{3}$ (3) 215 (4) 2.53 (5) 400,000,000 (6) £36.54 (7) 4,200 (8) 4.25 (9) $\frac{3}{14}$ (10) 9

Exercise 8 (1) £15 (2) 7.5 (3) 64 (4) 30 (5) 15 (6) $\frac{26}{35}$ (7) 51,770 (8) 18.76 (9) 0.42 (10) 96 (11) 112

Exercise 9 (1) 37 minutes (2) $\frac{5}{9}$ (3) 197 (4) $1\frac{4}{5}$ (5) 24.32 (6) $147.60 (7) 1,020 (8) 391.04 (9) 57,672 (10) 543

Exercise 10 (1) 24, 28, 27, 40, 8 (2) 28 (3) 6,445 (4) $\frac{3}{10}$ (5) 42 remainder 2 (6) 9 (7) 280,000,000,000,000 (8) 7.5 (9) $\frac{5}{9}$ (10) $\frac{1}{2}$ (11) 90

Exercise 11 (1) 6, 8, 3, 10, 7 (2) 11 hours 5 minutes (3) 23 (4) 5 (5) £1 (6) 2.875 (7) $1\frac{1}{3}$ (8) $1\frac{2}{7}$ (9) 48

Exercise 12 (1) 33 (2) $\frac{5}{7}$ (3) 1 (4) 6 (5) 216 (6) 5,912 (7) 68.71 (8) $\frac{3}{8}$ (9) 45,896 (10) 2,777 (11) 8 (12) 1 hour 22 minutes

Exercise 13 (1) 27, 0, 30, 42, 35 (2) 20.6 (3) 6,366 (4) $\frac{2}{5}$ (5) 17 remainder 1 (6) 17.2 (7) 750 (8) 138.7 (9) 2,222,106 (10) £18

Exercise 14 (1) 49 (2) 360 (3) 1 hour 45 minutes (4) 30 (5) $\frac{22}{25}$ (6) $\frac{4}{5}$ (7) 320,000,000 (8) £5.85 (9) 1,104.5 (10) $1\frac{1}{6}$

Exercise 15 (1) 6, 8, 8, 6, 9 (2) 20 (3) $\frac{3}{7}$ (4) £30 (5) 16 (6) 32 (7) 30 (8) 25 (9) 9,941 (10) 64 (11) 48 (12) £12.50

Exercise 16 (1) 12, 9, 32, 36, 7 (2) 664 (3) 50,552 (4) 20 (5) £79.36 (6) 252 (7) 1 hour 38 minutes (8) 12 (9) 100

Exercise 17 (1) 37 (2) 260 (3) $\frac{5}{13}$ (4) 368 (5) 42.5 (6) $\frac{8}{27}$ (7) 92.018 (8) 21,000,000,000 (9) 1,342.79 (10) $1\frac{1}{2}$ (11) 27.45 (12) 13

Exercise 18 (1) 6, 9, 5, 14, 12 (2) 3:23 pm (3) 325 (4) 2,158 (5) 6 (6) £247.68 (7) $\frac{5}{14}$ (8) 1.1 (9) 19 (10) 0.85

Exercise 19 (1) 74 (2) $\frac{1}{3}$ (3) 486 (4) 3 (5) $\frac{2}{5}$ (6) 122,232 (7) €0.98 (8) 4,283 (9) £30 (10) 1,150 (11) $\frac{7}{8}$ (12) 1 (13) –2

Exercise 20 (1) 6, 24, 40, 27, 42, 50, 0, 8, 56, 108 (2) 465 (3) 84 remainder 3 (4) $\frac{7}{10}$ (5) £2,557.50 (6) 42,506 (7) 114 (8) 3 (9) 62.3

Exercise 21 (1) 140 (2) 14 (3) 420 (4) 1 (5) $\frac{5}{36}$ (6) $\frac{1}{5}$ (7) 14,400 (8) 14.9 (9) 12 minutes 14 seconds (10) 37.96 (11) 2.125 (12) 3.6

Exercise 22 (1) 4, 4, 13, 4, 7 (2) 12,000 (3) 34 minutes (4) 24 (5) $\frac{3}{4}$ (6) £7.35 (7) $\frac{3}{8}$ (8) 188 (9) 10,098 (10) £32

Exercise 23 (1) 24 (2) 1,953 (3) 66,306 (4) £12 (5) $\frac{32}{45}$ (6) 30 (7) 3.5 (8) 23,255,181 (9) $\frac{1}{12}$ (10) 256 (11) 229 (12) 0

Exercise 24 (1) 56 (2) 1.92 (3) $\frac{6}{7}$ (4) 28 remainder 1 (5) $27 (6) 560 (7) $2\frac{5}{6}$ (8) 577,163 (9) $\frac{16}{21}$ (10) 7 (11) 25

Exercise 25 (1) 3, 3, 3, 3, 3 (2) 2,925 (3) $\frac{8}{11}$ (4) 0.1875 (5) 53,046 (6) 5,456 (7) £45 (8) $6 (9) $\frac{1}{4}$ (10) 63, 48, 55, 72, 48, 65, 56