Sparx Maths

# Year 7 Term 1

## Revision Workbook

# About this workbook

This workbook supports the revision of topics covered in **Year 7 Term 1** of the Sparx Maths Curriculum.

The workbook is divided into two sections:

- **Fluency questions** on each unit to practise the key concepts.
- **Mixed questions** on all topics to strengthen and deepen understanding.
  This section contains more challenging reasoning questions, cross-topic questions and problem solving questions.

If you use Sparx Maths you can find more questions and videos by searching for the following Sparx topic codes in Independent Learning.

Topic codes are also given with each question.

| Units | Sparx topic codes | | | | | |
|---|---|---|---|---|---|---|
| Number sense | M763 | M704 | M522 | M527 | M111 | M431 |
| Adding and subtracting | | | M928 | M429 | M347 | M152 |
| Multiplying | | | M113 | M911 | M187 | M803 |
| Dividing | | M462 | M354 | M873 | M262 | M491 |
| Calculating with negative numbers | | | | | M106 | M288 |
| Order of operations | | | M135 | M521 | M952 | M409 |
| Expressions | | M813 | M830 | M795 | M531 | M949 |
| Substitution | | | M417 | M327 | M208 | M979 |
| Solving equations | | | | M707 | M634 | M647 |
| Time | | M515 | M892 | M627 | M963 | M747 |
| Measures | | | | M828 | M774 | M487 |

All questions in this workbook are non-calculator

**Q1**
M704

Arrange the numbers below from smallest to largest.

**461** **562** **439** **538**

Answer: .....

**Q2**
M704

Three number cards are shown below.


Arrange the three cards to make

a) the smallest possible number.

Answer: 

b) the largest possible number.

Answer: 

**Q3**
M704

Write down the number forty thousand and twelve in figures.

Answer: .....

**Q4**
M522

Circle the number which has 5 ones and 6 tenths.

1.562 165.2 25.16

15.62 21.65 162.5

**Q5**
M522

Arrange the numbers below in ascending order (from smallest to largest).

0.2 0.17 0.16 0.03

Answer: .....

**Q6**
M522

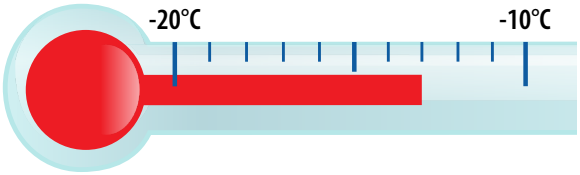
Arrange the numbers below in ascending order.

5.6 5.3 5.25 4 3.72 3.78

Answer: .....

**Q7**
M527

What temperature is shown on the thermometer?




Answer: ..... °C

**Q8**
M527

Put the numbers below in ascending order.

-6 5 1 -2 8 -4

Answer: .....

**Q9**
M527

Write < or > in the boxes to make the statements below correct.

a) 4 ☐ -6

b) -9 ☐ -3

c) -5 ☐ -7

**Q10**
M111

Round 64 447 to the

a) nearest 10

Answer: .....

b) nearest 100

Answer: .....

**Q11**
M431

What is 16.8 rounded to the nearest whole number?

Answer: .....

**Q12**
M431

A pair of jeans costs £32.42

What is the cost of the jeans to the nearest £1?

Answer: £ .....

**Q13**
M431

Round 3.975 to

a) 2 decimal places.

Answer: .....

b) 1 decimal place.

Answer: .....

**Q14**
M111

Round 9976 to the nearest 100

Answer: .....

**Q1**
M928

Work out 651 + 75

Answer: .....

**Q2**
M928

Work out the sum of the numbers shown below.

159 313 342

Answer: .....

**Q3**
M429

Calculate 17.8 + 4.54

Answer: .....

**Q4**
M347

Work out 546 - 29

Answer: .....

**Q5**
M152

Subtract 4.29 from 14.4

Answer: .....

**Q6**
M152

Oliver has a bag of raisins that weighs 26.07g.
Ava's bag of raisins is 8.54g **lighter** than Oliver's.

How much does Ava's bag of raisins weigh?

Answer: ..... g

**Q1**
M187

Work out 217 x 3

Answer: .....

**Q2**
M187

Work out 58 x 37

Answer: .....

**Q3**
M113

Fill in the gap to complete the calculation below.

$\square$ x 1000 = 7250

**Q4**
M911
M803

Calculate

a) 90 x 0.05

Answer: .....

b) 0.7 x 0.3

Answer: .....

**Q1**
M354

Work out 238 divided by 7

Answer: .....

**Q2**
M354

Calculate 384 ÷ 12

Answer: .....

**Q3**
M873

Work out the remainder when 108 is divided by 7

Answer: .....

**Q4**
M873

Callum sorts 50 eggs into boxes of 6, but has some eggs left over.

How many eggs are left over?

Answer: .....

**Q5**
M262

Work out

a) 76.2 ÷ 6

Answer: .....

b) 116 ÷ 8

Answer: .....

**Q6**
M491

Calculate

a) 18 ÷ 0.3

Answer: .....

b) 2.52 ÷ 0.6

Answer: .....

**Q1**
M106

Work out -5 + 3


Answer: .....

**Q2**
M106

Work out 4 - (-3)

Answer: .....

**Q3**
M106

Work out 3 - 4 - 2

Answer: .....

**Q4**
M106

Calculate 38 - 67

Answer: .....

**Q5**
M288

Calculate -7 x -8

Answer: .....

**Q6**
M288

Work out 78 ÷ -6

Answer: .....

**Q1**
M521

Work out

a) $8 - 4 + 2 \times 3$

Answer: .....

b) $17 - (5 + 2 \times 3)$

Answer: .....

**Q2**
M135

a) Calculate $9^2$

Answer: .....

b) Work out the value of $\sqrt{36}$

Answer: .....

**Q3**
M521

Find the value of $2 \times (7 - 2)^3$

Answer: .....

**Q4**
M521

Work out $\dfrac{6 + 12 \times 4}{15 - 11 + 2}$

Answer: .....

**Q5**
M135

One of the square roots of 64 is 8
What is the other?

Answer: .....

**Q6**
M135

Write down

a) $38^1$

Answer: .....

b) $24^0$

Answer: .....

**Q7**
M952

Decide whether each of the statements below is true or false.

a) $12 + 4 = 4 + 12$ True / False

b) $12 \div 4 = 4 \div 12$ True / False

c) $12 - 4 = 4 - 12$ True / False

d) $12 \times 4 = 4 \times 12$ True / False

**Q8**
M409

Circle all of the following that are equivalent to 17 x 3 x 5

**17 x 8** **17 x (3 x 5)** **17 x 15**

**(17 x 3) x 5** **(17 x 3) x (17 x 5)**

**Q1**
M813

Choosing from these options

$y + 3$ $3y$ $y - 3$ $3 - y$ $\frac{y}{3}$ $\frac{3}{y}$

write the statements below in algebraic notation.

a) 3 times $y$

Answer: .....

b) 3 divided by $y$

Answer: .....

c) $y$ add 3

Answer: .....

d) 3 less than $y$

Answer: .....

**Q2**
M813

Amira is $d$ years old.

Joshua's age is Amira's age divided by 5
Oliver is 2 years older than Joshua.

Write an expression for Oliver's age in terms of $d$.

Answer: .....

**Q3**
M830

Match each of the examples on the left to the word that best describes it.

| | |
|---|---|
| $4x + 4 = 20$ | Expression |
| $6y - 3 < 15$ | Equation |
| $2w$ | Inequality |

**Q4**
M813

Write the following expressions in their simplest form.

a) $2h \times 6k$

Answer: .....

b) $w \times w$

Answer: .....

**Q5**
M795
M531
M949

Fully simplify

a) $5d + 3d$

Answer: .....

b) $5m + m + 7$

Answer: .....

c) $4 + 5y + 3 - 8y$

Answer: .....

d) $7x + 3y + 6 + 2y + 3x$

Answer: .....

e) $6f^2 + 3f + 2 - f^2 + f$

Answer: .....

f) $2xy + 6x + 2 + 2yx - 6x + y$

Answer: .....

**Q1**
M417

Work out the value of each expression when $t = 12$

a) $t + 3$

Answer: .....

b) $3t$

Answer: .....

c) $t - 3$

Answer: .....

d) $\frac{t}{3}$

Answer: .....

**Q2**
M327

Work out the value of each expression when $x = 5$

a) $\frac{x}{5} + 24$

Answer: .....

b) $x^2 + 3$

Answer: .....

c) $3(4 + x)$

Answer: .....

**Q3**
M979

A travel company uses the formula below to calculate the cost of a holiday.
How much will Freya's holiday cost if she wants to go for 10 nights?

$c = 80n + 350$

$c$ = total cost in pounds
$n$ = number of nights

Answer: £ .....

**Q4**
M417

Find the value of $pq$ when $p = 4$ and $q = 3$

Answer: .....

**Q5**
M208

$v = u + 10t$
Find $v$ when $u = 3$ and $t = 8$

Answer: $v =$ .....

**Q6**
M327

What is the value of $g(3g + h)$ when $g = 2$ and $h = 7$?

Answer: .....

**Q1**
M707

Solve

a) $x - 12 = 15$

Answer: $x =$ .....

b) $\frac{y}{4} = 3$

Answer: $y =$ .....

c) $30 = 10n$

Answer: $n =$ .....

**Q2**
M634

Solve $34 = 4 + 5x$

Answer: $x =$ .....

**Q3**
M647

Solve $\frac{n}{4} + 5 = 13$

Answer: $n =$ .....

**Q4**
M647

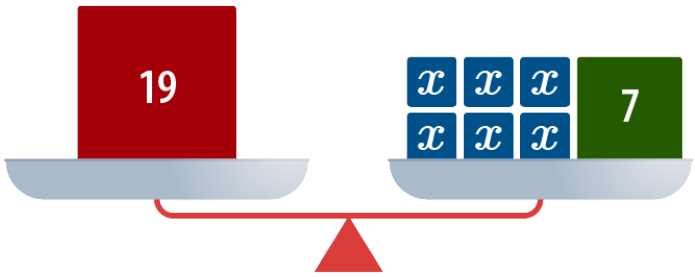
Solve

$15 = \frac{m}{3} - 6$

Answer: $m =$ .....

**Q5**
M634

The scales shown below are balanced.




a) Write an equation to represent this situation.

Answer: .....

b) Solve your equation to find the value of $x$

Answer: $x =$ .....

**Q1**
M892

Write the time shown using the

a) 12 hour clock.


Answer: .....

b) 24 hour clock.

Answer: .....

**Q2**
M515

Order these times from shortest to longest.

**190 minutes** **3600 seconds** **2 hours** **2 hours and 40 minutes**

Answer: .....

.....

**Q3**
M627

What time is 23 minutes later than 16:40?

Answer: .....

**Q4**
M627

Theodore started watching a film at 19:30
The film was 1 hour and 56 minutes long, but part-way through he paused it for 12 minutes.

What was the time when the film finished?

Answer: .....

**Q5**
M747

A local arts centre has a music event on the third Monday of every month.

What date was the music event in the month shown below?
Give your answer in the form dd/mm/yyyy.

| December 2022 | | | | | | |
|---|---|---|---|---|---|---|
| Mon | Tue | Wed | Thu | Fri | Sat | Sun |
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

Answer: .....

**Q6**
M963

Leah arrives at Birmingham station at 16:30 and catches the next train to Bristol.

When does Leah arrive in Bristol?

**Taunton to Derby**

| Train station | Time | | |
|---|---|---|---|
| Taunton | 15 : 18 | 16 : 30 | 17 : 06 |
| Bristol | 15 : 58 | 17 : 10 | 17 : 46 |
| Cheltenham | 16 : 40 | 17 : 52 | 18 : 28 |
| Birmingham | 17 : 33 | 18 : 45 | 19 : 21 |
| Tamworth | 17 : 49 | 19 : 01 | 19 : 37 |
| Derby | 18 : 10 | 19 : 22 | 19 : 58 |

**Derby to Taunton**

| Train station | Time | | |
|---|---|---|---|
| Derby | 15 : 26 | 16 : 38 | 17 : 14 |
| Tamworth | 15 : 47 | 16 : 59 | 17 : 35 |
| Birmingham | 16 : 03 | 17 : 15 | 17 : 51 |
| Cheltenham | 16 : 56 | 18 : 08 | 18 : 44 |
| Bristol | 17 : 38 | 18 : 50 | 19 : 26 |
| Taunton | 18 : 18 | 19 : 30 | 20 : 06 |

Answer: .....

**Q1**
M828

Match each item below with the best estimate for its length.

| | |
|---|---|
| Shoe  | 12 m |
| Bus  | 2 m |
| Guitar  | 6 mm |
| Staple  | 89 cm |
| Sofa  | 22 cm |

**Q2**
M487

Match each of the measurements below with the most sensible unit to give them in.

| | |
|---|---|
| Capacity of a bucket  | grams (g) |
| Capacity of a teaspoon  | millilitres (ml) |
| Mass of a cat  | litres (l) |
| Mass of an eraser  | kilograms (kg) |

**Q3**
M774

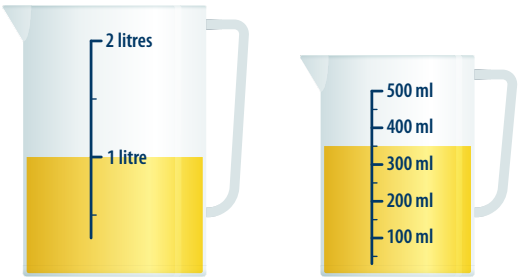
A bag weighs 3200 grams.

How much does this bag weigh in kilograms?

Answer: ..... kg

**Q4**
M774

How many millilitres of juice are in these measuring jugs in total?




Answer: ..... ml

**Q5**
M774

Write <, > or = in the boxes to make the statements correct.

a) 2.3 mm ☐ 23 cm

b) 1790 ml ☐ 10 litres

c) 1.63 m ☐ 163 cm

d) 14 g ☐ 0.13 kg

**Q1**
M928

Fill in the boxes to make this addition correct.

$$\begin{array}{r} 4\ 3\ \square \\ +\ 2\ \square\ 8 \\ \hline \square\ 7\ 5 \\ \hline 1 \end{array}$$

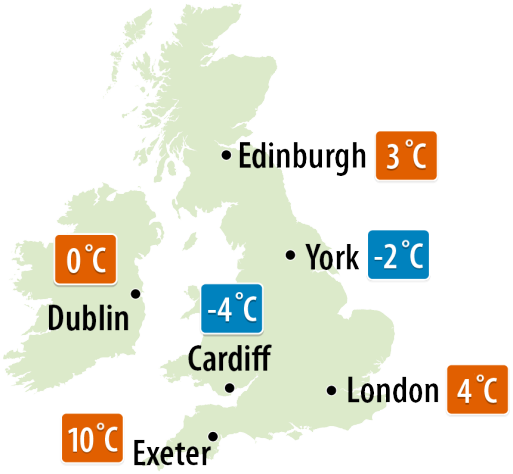
**Q2**
M522

What number is halfway between 73.7 and 73.71?

Answer: .....

**Q3**
M527

This weather map shows the temperatures recorded one night.




Write down the cities in order of their temperatures from coldest to warmest.

Answer: .....

.....

**Q4**
M952

Use the fact that 5164 + 7938 = 13 102 to work out

7938 + 5164 + 400

Answer: .....

**Q5**
M527

Write down these numbers in ascending order.

4.3 -6.7 6.5 -6.4 -4 -4.7

Answer: .....

**Q6**
M111

Sue thinks of a whole number.

Rounded to the nearest 10 her number is 850
Rounded to the nearest 100 her number is 900

Her number is odd.

What could Sue's number have been?
List all possible numbers.

Answer: .....

**Q7**
M774

Put the following measurements into ascending order of length.

**1.5 m** **1250 mm** **185 cm** **13.5 cm**

Answer: .....

**Q8**
M152
M429

Darren goes to the shop and buys a pineapple, a watermelon and a loaf of bread.
Their prices are shown below.

He pays with a £10 note.
How much change does he get?


£2.60


£3.29


84p

Answer: £ .....

**Q9**
M354
M873

Bruce needs 26 sausages for a barbecue.
They are sold in packs of 6

How many packs does he need to buy?

Answer: .....

**Q10**
M106
M521

Work out -6.5 + 1.3 + 1.2 x 2

Answer: .....

**Q11**
M417
M327

Work out the value of the expressions below when $x = -3$

a) $3x$

Answer: .....

b) $x - 5$

Answer: .....

c) $2x - 6$

Answer: .....

**Q12**
M354

Barbara has £184 to give to her 8 grandchildren.
If she divides the amount equally between them, how much does each grandchild receive?

Answer: £ .....

**Q13**
M828
M803

An airline says that passengers must pay £4.85 for each kilogram that their suitcase is over 9kg.

George's suitcase is shown on the scales below.
How much does he have to pay?


Answer: £ .....

**Q14**
M521

Place one set of brackets into this expression to make the answer correct.

**10 - 2 x 3 + 1 = 3**

**Q15**
M208
M803

$y = b^a$

Work out the value of $y$ when $a = 2$ and $b = 1.2$

Answer: $y =$ .....

**Q16**
M963

Jessica is meeting a friend at Summer Park at 5.00 pm.

To get there, she will catch a bus from Upper Bridge, which is a 10 minute walk from her home.

Use the timetable below to work out the latest time she can leave home to meet her friend on time.

| Bus timetable | | | | | |
|---|---|---|---|---|---|
| | Bus Station | 15 : 15 | 15 : 45 | 16 : 15 | 16 : 45 |
| | Upper Bridge | 15 : 23 | 15 : 53 | 16 : 23 | 16 : 53 |
| | Village Square | 15 : 30 | 16 : 00 | 16 : 30 | 17 : 00 |
| | Quay Place | 15 : 38 | 16 : 08 | 16 : 38 | 17 : 08 |
| | Lower Lock | 15 : 41 | 16 : 11 | 16 : 41 | 17 : 11 |
| | Summer Park | 15 : 51 | 16 : 21 | 16 : 51 | 17 : 21 |
| | Tech Centre | 16 : 05 | 16 : 35 | 17 : 05 | 17 : 35 |

Answer: .....

**Q17**
M813

Fully simplify

a) $6n \times -4p$

Answer: .....

b) $0.2 \times f \times 15g$

Answer: .....

**Q18**
M135

Fill in the box to make the statement true.

$$2^{\square} = 64$$

**Q19**
M873

41 x 32 = 1312

What is the remainder when 1315 is divided by 41?

Answer: .....

**Q20**
M491

A 21.9m long plank of wood is cut into sections of length 0.8m.

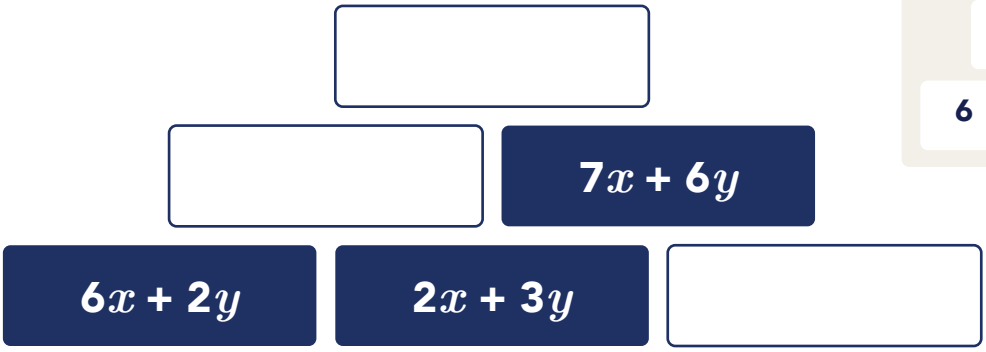
How long is the piece of wood that is left over?

Answer: ..... m

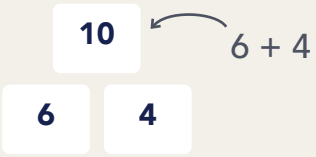
**Q21**
M531

In the pyramid below, the expression in a brick is found by adding together the expressions of the two bricks below it, as shown in the example.

Fill in the empty bricks.




Example




**Q22**
M187

A hockey team hires 65 buses to take fans to a match.
Each bus can transport 54 passengers.

3807 fans want to go to the match.
How many of them will not be able to travel on the buses?

Answer: .....

**Q23**
M634

Solve $4x + 9 - 5x - 11 + 7x = -20$

Answer: $x =$ .....

**Q24**
M409

Use the fact that 111 = 3 x 37 to calculate

a) 4 x 3 x 37

Answer: .....

b) 37 x 15

Answer: .....

c) 111 ÷ 37

Answer: .....

**Q25**
M803

Jodie is paying for swimming lessons.
Each lesson costs £3.45
She pays for 15 lessons.

How much change will she get from £60?

Answer: £ .....

**Q26**
M707

Find the values of $a$ and $b$ in the equations below.

$11 = 5 + a$

$a + 8 = 10 + b$

Answer: $a =$ ..... and $b =$ .....

**Q27**
M627

Harry and Clare both travelled from Oldbridge to Tayside.

Harry left Oldbridge at 08:35 and arrived at Tayside 6 hours and 48 minutes later.
Clare left Oldbridge 45 minutes before Harry did, but her journey was 30 minutes longer.

When did Clare arrive at Tayside?
Give your answer using the 24 hour clock.

Answer: .....

**Q28**
M208
M634

$w = 3f + 26$

Given that $w = 32$, work out the value of $f$.

Answer: $f =$ .....

**Q29**
M262

Myah buys a wardrobe that costs a total of £385
She pays an initial amount of £54
She then pays the rest of the money in 4 equal monthly payments.

How much is each monthly payment?

Answer: £ .....

**Q30**
M979

A bowling alley can be hired for a party.
The cost is calculated using the formula below.

Cost = £11 x the number of people + £30

Hiring the bowling alley for a party cost £316
How many people were at the party?

Answer: .....

**Q31**

M647

Find the value of $p$ in the following equation.

$\frac{p}{27} - 0.4 = 0.8$

Answer: $p =$ .....

**Q32**

M647

What are the two solutions to the equation below?

$\frac{d^2}{4} + 43 = 52$

Answer: $d =$ ..... or $d =$ .....

# Answers

## Number sense

**Q1** 439, 461, 538, 562
**Q2a** 146
**Q2b** 641
**Q3** 40 012

**Q4** 15.62
**Q5** 0.03, 0.16, 0.17, 0.2
**Q6** 3.72, 3.78, 4, 5.25, 5.3, 5.6

**Q7** -13 ℃
**Q8** -6, -4, -2, 1, 5, 8
**Q9a** 4 > -6
**Q9b** -9 < -3
**Q9c** -5 > -7

**Q10a** 64 450
**Q10b** 64 400
**Q11** 17
**Q12** £ 32
**Q13a** 3.98
**Q13b** 4.0
**Q14** 10 000

## Adding and subtracting

**Q1** 726
**Q2** 814
**Q3** 22.34

**Q4** 517
**Q5** 10.11
**Q6** 17.53 g

## Multiplying

**Q1** 651
**Q2** 2146
**Q3** 7.25
**Q4a** 4.5
**Q4b** 0.21

## Dividing

**Q1** 34
**Q2** 32
**Q3** 3

**Q4** 2
**Q5a** 12.7
**Q5b** 14.5
**Q6a** 60
**Q6b** 4.2

## Calculating with negative numbers

**Q1** -2
**Q2** 7
**Q3** -3
**Q4** -29
**Q5** 56
**Q6** -13

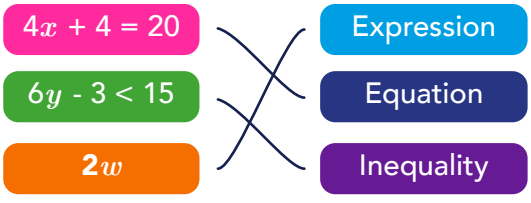
## Order of operations

**Q1a** 10
**Q1b** 6
**Q2a** 81
**Q2b** 6
**Q3** 250
**Q4** 9

**Q5** -8
**Q6a** 38
**Q6b** 1
**Q7a** True
**Q7b** False
**Q7c** False
**Q7d** True
**Q8** 17 x (3 x 5), 17 x 15, (17 x 3) x 5

## Expressions

**Q1a** $3y$
**Q1b** $\frac{3}{y}$
**Q1c** $y + 3$
**Q1d** $y - 3$
**Q2** $\frac{d}{5} + 2$
**Q3**




## Expressions

**Q4a** $12hk$
**Q4b** $w^2$
**Q5a** $8d$
**Q5b** $6m + 7$
**Q5c** $7 - 3y$
**Q5d** $10x + 5y + 6$
**Q5e** $5f^2 + 4f + 2$
**Q5f** $4xy + y + 2$

## Substitution

**Q1a** 15
**Q1b** 36
**Q1c** 9
**Q1d** 4
**Q2a** 25
**Q2b** 28
**Q2c** 27

**Q3** £1150
**Q4** 12
**Q5** $v = 83$
**Q6** 26

## Solving equations

**Q1a** $x = 27$

**Q1b** $y = 12$

**Q1c** $n = 3$

**Q2** $x = 6$

**Q3** $n = 32$

**Q4** $m = 63$

**Q5a** $19 = 6x + 7$

**Q5b** $x = 2$

## Time

**Q1a** 6.40 pm

**Q1b** 18:40

**Q2** 3600 seconds, 2 hours, 2 hours and 40 minutes, 190 minutes

**Q3** 17:03

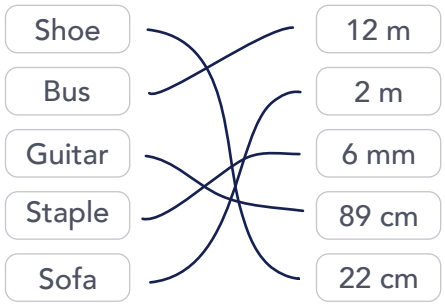
**Q4** 21:38

**Q5** 19/12/2022

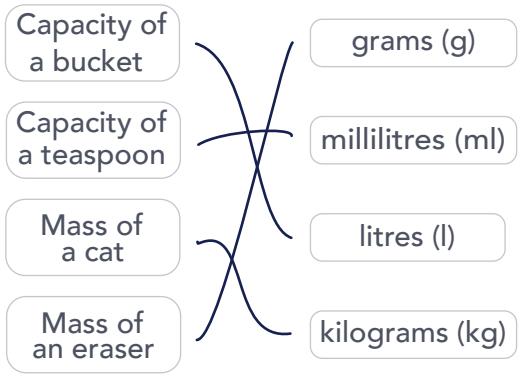
**Q6** 18:50

## Measures

**Q1**




**Q2**




**Q3** 3.2 kilograms

**Q4** 1350 millilitres

**Q5a** 2.3 mm < 23 cm

**Q5b** 1790 ml < 10 litres

**Q5c** 1.63 m = 163 cm

**Q5d** 14 g < 0.13 kg

## Mixed topics

**Q1**

$$\begin{array}{r} 4\,3\,\boxed{7} \\ +\ 2\,\boxed{3}\,8 \\ \hline \boxed{6}\,7\,5 \\ \hline 1 \end{array}$$

**Q2** 73.705

**Q3** Cardiff, York, Dublin, Edinburgh, London, Exeter

**Q4** 13 502

**Q5** -6.7, -6.4, -4.7, -4, 4.3, 6.5

**Q6** 851, 853

**Q7** 13.5 cm, 1250 mm 1.5 m, 185 cm

**Q8** £ 3.27

**Q9** 5

**Q10** -2.8

**Q11a** -9

**Q11b** -8

**Q11c** -12

**Q12** £ 23

**Q13** £ 24.25

**Q14** 10 - ( 2 x 3 + 1 ) = 3

**Q15** $y = 1.44$

**Q16** 16:13 or 4.13 pm

**Q17a** $-24np$

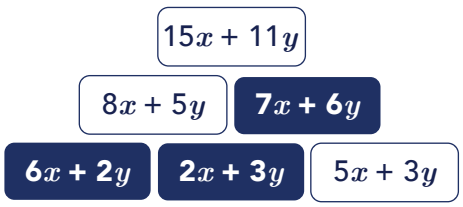
**Q17b** $3fg$

**Q18** $2^{\boxed{6}} = 64$

**Q19** 3

**Q20** 0.3 m

**Q21**




**Q22** 297

**Q23** $x = -3$

**Q24a** 444

**Q24b** 555

**Q24c** 3

**Q25** £ 8.25

**Q26** $a = 6$, $b = 4$

**Q27** 15:08

**Q28** $f = 2$

**Q29** £ 82.75

**Q30** 26

**Q31** $p = 32.4$

**Q32** $d = 6$, $d = -6$

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