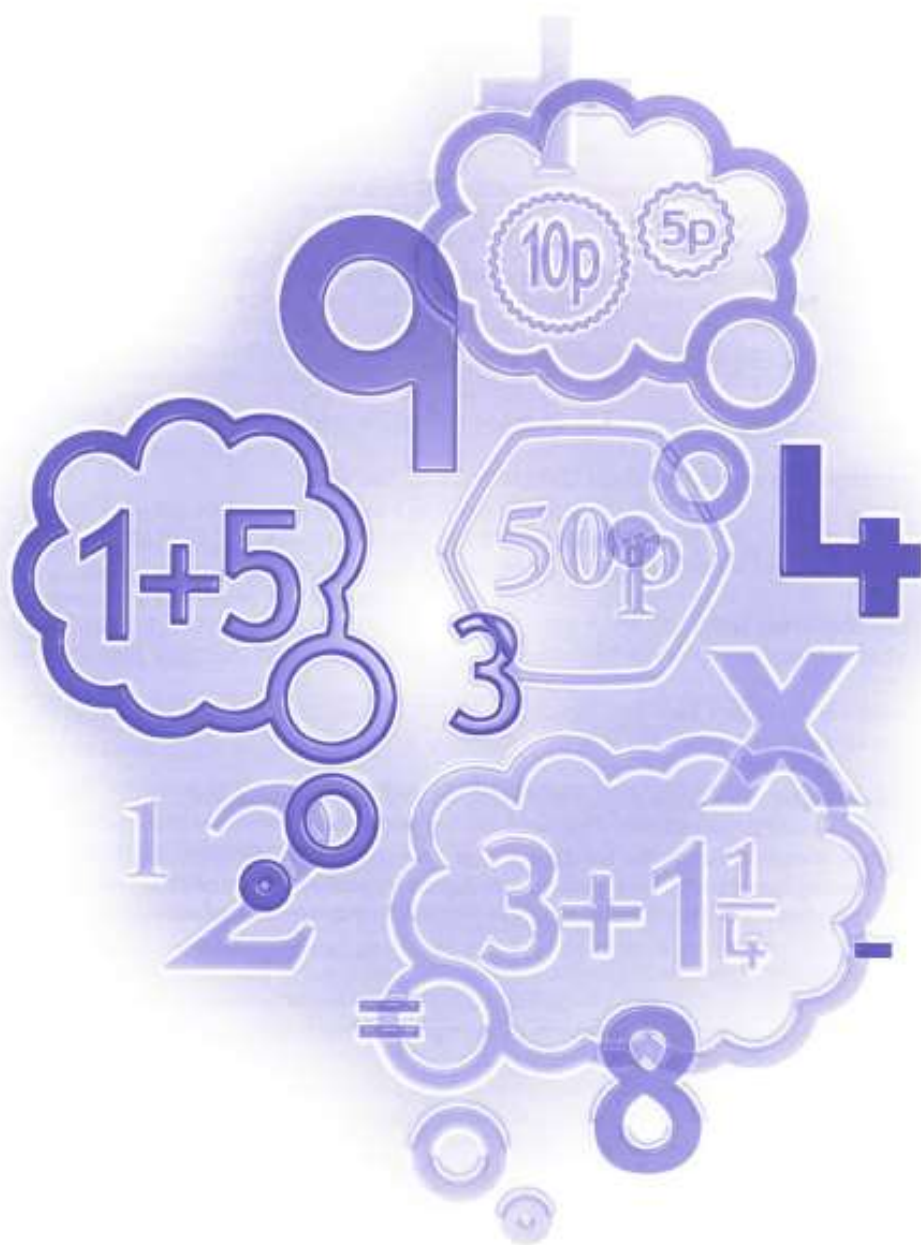


Mental Arithmetic 4

Schofield&Sims



Schofield & Sims Mental Arithmetic

The Language of Maths

Boost your number vocabulary by learning the meanings of the maths terms listed below – all of them are used in this book.

arc – part of the circumference of a circle.

area of a triangle – to calculate the area of a triangle you use this formula:
 $\text{area} = \text{half the base} \times \text{the height}$. So if the base of the triangle was 6 cm and the height was 10 cm you would multiply $3 \times 10 = 30 \text{ cm}^2$ (cm^2 means 'centimetres squared').

century – a period of 100 years. If you score 100 runs in cricket you score a century. A centurion was a Roman soldier in charge of 100 men.

factor – a whole number that divides exactly into another whole number. 2 is a factor of 6 because 2 divides into 6 with no remainder.

hexagon – a two-dimensional (2-D) shape with six sides.

octagon – a two-dimensional (2-D) shape with eight sides.

pentagon – a two-dimensional (2-D) shape with five sides.

per cent – 'out of a hundred'. If we have one hundred people and 10 of them have colds then 10 per cent have colds and 90 per cent do not. The symbol for per cent is '%'.
 10%

pi – the Greek letter 'p', which looks like this: π . We use it as a symbol to stand for a special number, 3.14, which we can use to find information about circles and angles. Ask your teacher to explain this to you.

ratio – if we have 4 blue marbles and 3 red marbles we can say that the ratio of blue marbles to red marbles is 4 to 3. Ratio is a way of comparing information.

reflex angles – are large angles that measure between 180° and 360° .

scale – sometimes in maths we draw things 'to scale'. We might draw a plan of a classroom by carefully measuring everything in it and then making them smaller on our plan. If a desk was 50 cm wide in real life we may draw it as 1 cm on our plan. We would say that we have a scale of 1 cm to 50 cm.

semicircle – half a circle.

symmetry – matching. If two halves of a shape or pattern match one another exactly then we can say that they 'have symmetry' or 'are symmetrical'.

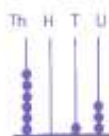
volume – the amount of space that something occupies or takes up. We often measure it in cubic centimetres (cm^3) or cubic metres (m^3).

Section 1 Test 1

A

ANSWER

1



Write in words the number shown on the abacus picture.

2

$17 + 8 + 16$

3

$965 - 60$

4

$(8 \times 7) + 5$

5

$(56 - 8) + 8$

6

$\frac{7}{10}$ of 100 g

7

$1\frac{3}{4}$ h = min

8

$\pounds 1.45 =$ FIVES

9

4 km 350 m = m

10

850 g + g = $1\frac{1}{2}$ kg

11

$\pounds 7.09 =$ pennies

12

TENS + 6 TWOS = $\pounds 1.82$

B

ANSWER

1

Write in figures the number twelve thousand and eight.

2

How many groups of 9 are there in 6 sixes?

3

What is the difference in pence between $\pounds 5$ and $\pounds 4$?

4

How many tens are equal to 1070?

5

Find the total of 53p and $\pounds 1.37$.

6

By how many g is $\frac{1}{2}$ kg heavier than 280 g?

7

Find the cost of 9 articles at 13p each.

8

How many mm are there in 10.7 cm?

9

How much change from a FIFTY after spending 17p and 16p?

10

Change to 24-hour clock times

(a) 9.35 a.m.

(b) 8.50 p.m.

11

Find the smallest number which will divide by both 6 and 8 without a remainder.

12

What sum of money when multiplied by 7 equals $\pounds 1.12$?

C

ANSWER

1

In a box were 48 cards. How many cards were there in 7 boxes?

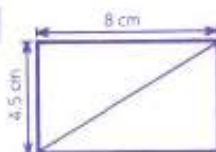
2

In the number 7479 how many times is the 7 marked x greater than the 7 marked y ?

3

A motorist travelled 348 km in 6 hours. Find his average speed in km/h.

4



This rectangular card is cut into two equal parts along a diagonal. Find the area of each part.

5

What are the next two numbers in this series?
10, 1, 10,

6

Find the difference in cost between 12 articles at 3p each and 12 articles at 5p each.

7

A bus leaves its station at 8.40 a.m. and arrives at its destination at noon. How long does the journey take? h min

8

PRICE OF CLOTH

(A) $\pounds 3.96$ per m

(B) $\pounds 4.18$ per m

By how much is cloth (B) more expensive per m than cloth (A)? p

9

The mass of fruit in a tin is 425 g. Find in kg and g the mass of the fruit in 10 tins.

10

Through how many degrees does the minute hand of a clock turn in 10 minutes?

11

A plank of wood is cut into 12 equal pieces. What fraction of the plank is 7 pieces?

12



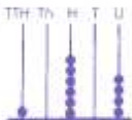
The diagram shows how Suki used her prize money.

(a) What fraction did she spend? (a)

(b) The prize was $\pounds 40$. How much did she save? (b) \pounds

Section 1 Test 2

A ANSWER

1  Write in words the number shown on the abacus picture.

2 $27 + 6 = 20 + \square$ _____

3 78×6 _____

4 $872 \div 8$ _____

5 $\text{£}1.68 - 96\text{p} = \square \text{ p}$ _____ p

6 27 quarters = _____


7 $\frac{1}{3}$ of $\text{£}4.32$ _____ £

8 $2080 \text{ m} = \square \text{ km } \square \text{ m}$ _____ km _____ m

9 $4 \text{ kg } 700 \text{ g} = \square \text{ g}$ _____ g

10 $\text{£}10 - \text{£}0.82$ _____ £

11 $\square \text{ FIFTIES} + 7 \text{ FIVES} = \text{£}1.85$ _____ FIFTIES

12  The time on the clock is 7 min slow. Write the correct time using a.m. or p.m. _____
afternoon

B ANSWER

1 Find the missing number.
 $5000 + \square + 7 = 5087$ _____

2 How many TWENTIES have the same value as 3 TENS and 1 FIFTY? _____ TWENTIES

3 Share $\text{£}1.56$ equally among 6 people. How much each? _____ p

4 Write 3.45 m as cm. _____ cm

5 Which of these numbers divide by 8 without a remainder?
12, 28, 32, 44, 56, 68 _____

6 Find the value of (a) $\frac{1}{5}$ of $\text{£}35$ (a) _____ £
(b) $\frac{2}{5}$ of $\text{£}35$. (b) _____ £

7 Write 996 to the nearest 10. _____

8 How many g in $2\frac{1}{2} \text{ kg}$? _____ g

9 Find the change from $\text{£}1$ after spending 19p and 17p. _____ p

10 What is the average of 6 cm, 9 cm, 7 cm, 10 cm? _____ cm

11 Change to 12-hour clock times
(a) 09.05 (a) _____
(b) 16.48. (b) _____

12 10 articles cost $\text{£}1.30$. Find the cost of one article. _____ p

C ANSWER

1 A cricketer scored 12 runs short of a century. How many runs did he score? _____


2 $3.7 \times 9 = 33.3$
Write the value of 3.7×90 . _____

3 The price of fish is $\text{£}6.40$ per kg. What is the cost of 1 kg 500 g? _____ £

4 How many 10-cm strips can be cut from a length of 5 m 60 cm? _____

5 There are 20 litres in the petrol tank of a car. If it is $\frac{2}{3}$ full, how many more litres will it hold? _____ l

6 Find the total value of these coins.



_____ £

7 A school's Easter holiday started on 26th March and ended on 9th April. How many days holiday were there? _____

8 A ship is sailing due East. It changes course to SE. Through how many degrees does it turn? _____ °


9

Josh	Sophie	Sunil
------	--------	-------

The diagram shows how three children shared a prize of $\text{£}40$. How much did each child receive?
Josh _____ £
Sophie _____ £
Sunil _____ £


10 A train leaves at 17.50 and arrives at midnight. How long does the journey take in h and min? _____ h _____ min

11 The price of butter is increased from $\text{£}1.29$ to $\text{£}1.34$ per 500 g. How much extra is paid for 6 kg? _____ p


12  Find
(a) the perimeter (a) _____
(b) the area of this square. (b) _____
(Write the unit of measurement in each case.)

Section 1 Test 3



A ANSWER


- 1  Write in words as a decimal the number shown on the abacus picture. _____
- 2 $300 + 70 + 9$ tenths
Write the answer as a decimal. _____
- 3 $4.6 + 0.8$ _____
- 4 $10.2 - 0.7$ _____
- 5 $£8.70 =$ _____ TENS _____ TENS
- 6 $20.4 \text{ cm} =$ _____ mm _____ mm
- 7 36.9×10 _____
- 8 $59 \div 10$ _____
- 9 $10.7 =$ _____ tenths _____
- 10 $200 \text{ g} +$ _____ $\text{g} = 0.5 \text{ kg}$ _____ g
- 11 $2.3 \text{ litres} =$ _____ ml _____ ml
- 12 1.8×7 _____

B ANSWER

- 1  What decimal fraction of the circle is
(a) shaded _____
(b) unshaded? _____
- 2 Write as a decimal forty and nine tenths. _____
- 3 Of these fractions $\frac{1}{5}$, 0.5 , $\frac{1}{4}$, 0.2 which is (a) the largest _____
(b) the smallest? _____
- 4 Find the total of 3.7, 1.3 and 0.8. _____
- 5 What is the difference between 0.3 and 10.3? _____
- 6 Find the cost of 100 g rice at 95p per $\frac{1}{2}$ kg. _____ p
- 7 What length is 6 times longer than 4.5 cm? _____ cm
- 8 How many months in the year have 31 days? _____
- 9 Share £2.00 exactly among 8 children. How much each? _____ p
- 10 Write each of these quantities to the nearest whole unit.
(a) 59.8 km _____ km
(b) 40.3 litres _____ l
- 11 Find the value of x if $2.5 \times 4 = 2 \times x$. _____
- 12 How many h and min from 08.50 to 11.00? _____ h _____ min

C ANSWER


- 1  What fraction of the square is shaded? _____
- 2 Josh has 40p and Ryan $\frac{1}{2}$ of this amount. How much have they altogether? _____ p
- 3 A cyclist travels 3 km in 10 min. Find his speed in km/h. _____ km/h
- 4  Find in mm the difference between the longest and shortest of these lines. _____ mm
- 5 Sophie bought a book for £1.75 and gave 7 FIVES and the rest in TENS. How many TENS did she give? _____ TENS
- 6 By how many g is a mass of 1.4 kg heavier than a mass of 850 g? _____ g
- 7 What is the date a week later than Christmas Day? _____
- 8 83° 124° 35° 107° 56°
Of these angles which two when added together make 2 right angles? _____

- 9 Material for a dress costs £5.50 per metre. Find the cost of (a) 10 cm _____ p
(b) 70 cm. _____ £
- 10 Two cans each hold 750 ml. By how many ml is their total volume less than 1.8 litres? _____ ml
- 11 A shopkeeper bought 6 pens for 95p. He sold them to make a profit of 25p. For how much did he sell each pen? _____ p
- 12  The width of the play space is half the length. Find
(a) its perimeter (a) _____
(b) its area. (b) _____
(Give the unit of measurement in each case.)

Section 1 Test 4

A

ANSWER

- 1  Write in words as a decimal the number shown on the abacus picture. _____
- 2 $8.03 = 8 + \frac{3}{100}$ _____
- 3 $2.26 + 1.04$ _____
- 4 $£3.04 =$ _____ pence _____ p
- 5 $248 \text{ cm} =$ _____ m _____ m
- 6 Write $\frac{1}{3}$ as a decimal. _____
- 7 $10 - 0.88$ _____
- 8 5.07×100 _____
- 9 Find in g (a) 0.1 of 1 kg _____ (a) _____ g
(b) 0.7 of 1 kg _____ (b) _____ g
- 10 Write as a decimal 503 hundredths. _____
- 11 0.46×8 _____
- 12 $2.16 \div 8$ _____

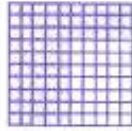
B


ANSWER

- 1 Write as a decimal $30 + \frac{7}{10} + \frac{4}{100}$. _____
- 2 What is the value in pence of the digit underlined?
(a) $£100.\underline{4}0$ _____ (a) _____ p
(b) $£15.0\underline{6}$ _____ (b) _____ p
- 3 Write in m and cm 109.46 m. _____ m _____ cm
- 4 Write the missing signs +, -, ×, ÷ in place of ● and ▲.
 $9 \bullet 6 = 3 \blacktriangle 5$ _____ ● _____ ▲ _____
- 5 Write as a decimal 15 tenths 7 hundredths. _____
- 6 Decrease 0.5 litre by 150 ml. _____ ml
- 7 How many h and min from 2.25 p.m. to 4.05 p.m.? _____ h _____ min
- 8 Write these fractions in their lowest terms. (a) $\frac{8}{12}$ (b) $\frac{21}{28}$ (a) _____ (b) _____
- 9 Divide £15 by 6 exactly. _____ £
- 10 Find the area of a rectangle measuring 8.5 cm by 6 cm. _____
- 11 Divide 75 kg by 100. Give the answer in g. _____ g
- 12 Which of these fractions are of equal value?
 $\frac{3}{4}$ 0.6 0.75 $\frac{7}{10}$ _____

C

ANSWER

- 1  Write as a decimal fraction the part of the square which is (a) shaded (a) _____
(b) unshaded. (b) _____
- 2 Badges cost 6p each. How many can be bought for £1.56? _____
- 3 A medicine spoon holds 5 ml. How many spoonfuls in $\frac{1}{2}$ litre? _____
- 4 Find the missing number in this example.
 $9 \overline{) \quad \quad \quad} 1 \text{ rem. } 7$

- 5 Mince costs £1.80 per $\frac{1}{2}$ kg. Find the cost of mince weighing 600 g. _____ £
- 6 A triangle has two equal sides each measuring 36 cm. Its perimeter is 1 m. Find the length of the third side. _____ cm
- 7 There were 845 people at a concert. Write this number.
(a) to the nearest 100 _____ (a) _____
(b) to the nearest 10. _____ (b) _____
- 8 There are two 2-place decimal numbers which are greater than 3.97 but less than 4.00. What are the numbers? _____
- 9 Fatima collected 150 pennies for the school fund. Olivia collected three times as many. How many £1 coins did they receive in exchange? _____
- 10 Josh's stride measures 40 cm. How many strides will he take in walking 10 m? _____
- 11 A path measures 9 m long and 50 cm wide. Find its area in m². _____ m²
- 12  The line AB is drawn to a scale 1 cm to 20 cm. Find the length the line represents (a) in cm _____ (a) _____ cm
(b) in mm. _____ (b) _____ mm