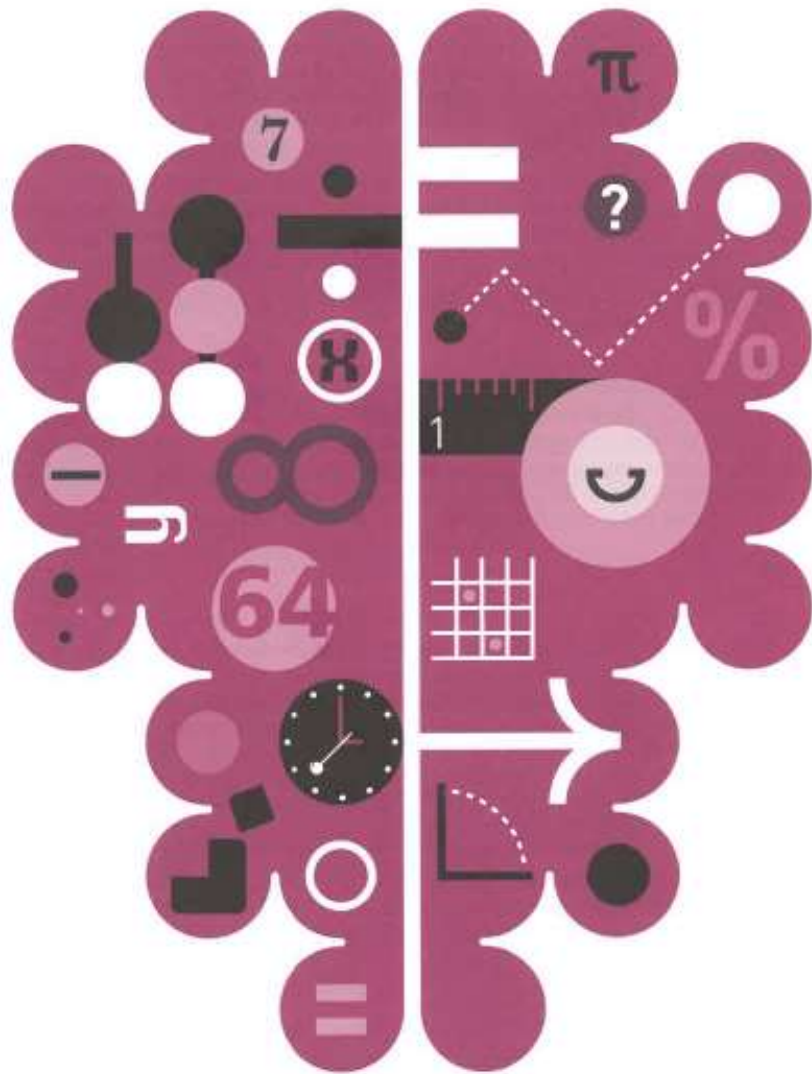


# Mental Arithmetic 5

Schofield&Sims



Name \_\_\_\_\_

## THE LANGUAGE OF MATHS

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**approximation** a close estimate – an approximate answer is one that is close to the exact answer  
**Example**  $9 \times 21$  is approximately  $10 \times 20 = 200$

**composite number** any number that is greater than 1 and is not a prime number

**consecutive** things that follow one after another in order  
**Examples** 6, 7, 8 and 9 are consecutive numbers  
March, April and May are consecutive months

**hectare** 10 000 square metres

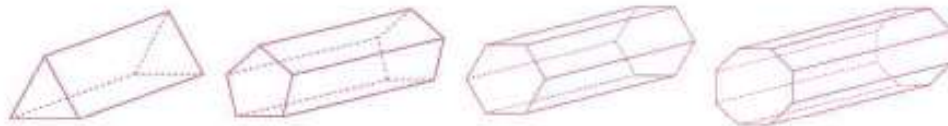
**inclusive** including all the things that have been mentioned – the opposite of inclusive is exclusive  
**Example** in the question 'How many days from 1 March to 8 March inclusive?', you would include both 1 and 8 March in your calculations (making eight days)

**multiple** the multiple of a number can be divided exactly by that number (without a remainder)  
**Example** 4, 6, 8 and 100 are all multiples of 2 because 2 divides into them with no remainder

**negative number** a number less than zero – a negative number has a minus sign in front of it  
**Example**  $-1$ ,  $-2$

**prime number** a number that divides by itself and 1 only  
**Example** 2, 3, 5, 7, 11, 13, 17, 19, 23, 29

**prism** a three-dimensional (3-D) shape with two ends that are the same size and shape



**square number** any number made by multiplying a whole number by itself  
**Example** 4 is a square number, it has been made by multiplying 2 by itself  $2 \times 2 = 4$  or  $2^2 = 4$

**square root**  $\sqrt{\quad}$  a number that has been multiplied by itself to make a square number – a square root is the opposite of a square number  
**Examples** the square root of 4 is 2 because  $2 \times 2 = 4$   
the square root of 9 is 3 because  $3 \times 3 = 9$

## SECTION 1 | Test 1

Schofield & Sims

A	Answer
1 $60\,000 + 3\,000 + 70 \div 8 =$	_____
2 $5 \times 8 \times 7 =$	_____
3 $8\text{ l } 550\text{ ml} - \frac{1}{4}\text{ l} =$ _____ l	_____ l
4 $\frac{5}{6}$ of $\pounds 42 =$ _____ $\pounds$	_____ $\pounds$
5 a $3\frac{5}{8} = \frac{\quad}{\quad}$	a _____
b $6\frac{4}{5} = \frac{\quad}{\quad}$	b _____
6 $\pounds 7.30 +$ _____ $10\text{ ps} = \pounds 10$	_____ $10\text{ ps}$
7 $3650\text{ m} =$ _____ $\text{ km}$ _____ $\text{ m}$	_____ $\text{ km}$ _____ $\text{ m}$
8 $180^\circ - (86^\circ + 64^\circ) =$ _____ $^\circ$	_____ $^\circ$
9 a $\frac{19}{50} =$ _____ %	a _____ %
b $0.64 =$ _____ %	b _____ %
10 $5.08 =$ _____ thousandths	_____ thousandths
11 $6^3 = 6 \times 6 \times 6 =$ _____	_____
12 $\pounds 4.50 \div 7 =$ _____ $\text{ p r}$ _____ $\text{ p}$	_____ $\text{ p r}$ _____ $\text{ p}$

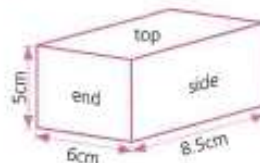
B	Answer
1 Write in words the number which is 400 less than 50 000.	_____
2 Find in $\pounds$ the total of 18p, 16p, 25p, 9p.	$\pounds$ _____
3 Change these improper fractions to mixed numbers. a $\frac{35}{6}$ b $\frac{63}{8}$	a _____    b _____
4 Find the difference between three 50ps and the sum of twelve 5ps and six 2ps.	_____ $\text{ p}$
5 How many times is 25g contained in 4kg?	_____
6 Find the change from a $\pounds 5$ note after spending $\pounds 2.03$ .	$\pounds$ _____
7 Which of these numbers are factors of 56? <span style="border: 1px solid black; padding: 2px;">2   3   5   7   9</span>	_____
8 What percentage of 2l is 400ml?	_____ %
9 Approximate: a 29.56 to the nearest 10	a _____
b 180 370 to the nearest 1000.	b _____
10 What fraction in its simplest form is equal to a 95%    b 0.04?	a _____    b _____
11 Find the cost of 700g at 90p per kilogram.	_____ $\text{ p}$
12 Find the area of a square with sides measuring 20cm each.	_____

C	Answer
1 How many thousandths must be added to 9.073 to make 10?	_____
2 Find the change from $\pounds 1.50$ after buying 2kg of oranges at 36p per $\frac{1}{2}$ kg.	_____ $\text{ p}$
3 Imran faces SE and turns clockwise through $1\frac{1}{2}$ right angles. In which direction is he now facing?	_____
4 A car travels 40km in 30min. How many kilometres will it travel at this speed in $\frac{3}{4}$ h?	_____ $\text{ km}$
5 A mango weighs 250g. How many mangos weigh 50kg?	_____
6 From the diagram find what fraction of all the employees are a men b women. c If the total number of employees is 400 how many are under 18?	a _____ b _____ c _____

Employees in a shop



7 Amy spends 30% of her money on a book and saves 60%. If she had 20p left how much had she at first?	$\pounds$ _____
8 A square with sides measuring 20cm each is cut along both diagonals into four equal triangles. What is the area of each triangle in $\text{cm}^2$ ?	_____ $\text{ cm}^2$
9 A bus departs at 19:47 and arrives at its destination 1h 16min later. Write the time of its arrival.	_____
10 The area of a rectangular path is $75\text{ m}^2$ . It is 50cm wide. How long is it in metres?	_____ $\text{ m}$
11 In seven weeks Katie saves $\pounds 3.15$ . Find her mean average weekly savings.	_____ $\text{ p}$
12 The measurements of the box are given. Find the area of a both the sides b both the ends c the top and bottom.	a _____ b _____ c _____



**A** Answer


- Write  $10 \times 100 \times 100$ 
  - in digits a \_\_\_\_\_
  - in words. b \_\_\_\_\_
- $£7.60 \times 20 =$  £ \_\_\_\_\_
- $1 = \frac{1}{4} + \frac{3}{8} +$  \_\_\_\_\_
- $10 - 6.32 =$  \_\_\_\_\_
- $320\text{min} =$  h \_\_\_\_\_ min
- $\frac{4}{5}$  of  $£4.50 =$  £ \_\_\_\_\_
- $0.175\text{l} =$  ml \_\_\_\_\_ ml
- $25\%$  of  $£7.00 =$  £ \_\_\_\_\_
- $2.4\text{m} + 55\text{cm} =$  cm \_\_\_\_\_ cm
- $1\%$  of  $£1 =$  p a \_\_\_\_\_ p
  - $13\%$  of  $£1 =$  p b \_\_\_\_\_ p
- $4050\text{mm} =$  m \_\_\_\_\_ m
- $\frac{3\text{kg } 820\text{g}}{6} =$  g \_\_\_\_\_ g

**B** Answer

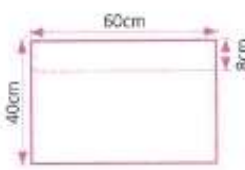
- Multiply the sum of 3.6 and 2.4 by 0.4. \_\_\_\_\_
- Give the date which is five months before 1 February. \_\_\_\_\_
- Which of these angles are
  - acute angles a \_\_\_\_\_
  - obtuse angles? b \_\_\_\_\_

$47^\circ$   $92^\circ$   $138^\circ$   $89^\circ$   $210^\circ$
- Three presents have a mass of 450g, 800g and 230g. Find their total mass in kilograms. \_\_\_\_\_ kg
- By how many millimetres is 780mm greater than 0.5m? \_\_\_\_\_ mm
- How many 20ps have the same value as  $£9.00$ ? \_\_\_\_\_ 20ps
- Write the answer to MD – DCCCXC in Roman numerals. \_\_\_\_\_
- How many times 0.625 is 625? \_\_\_\_\_
- Write as a percentage.
  - 17p of  $£1.00$  a \_\_\_\_\_ %
  - 300g of 1kg b \_\_\_\_\_ %
- 300ml cost 27p. Find the cost per litre. \_\_\_\_\_ p
- Approximate
  - $10\frac{3}{10}$  to the nearest whole number a \_\_\_\_\_
  - $£13.52$  to the nearest £. b £ \_\_\_\_\_
- Find the area of a rectangle measuring 7m long and 1.3m wide. \_\_\_\_\_  $\text{m}^2$

**C** Answer

- By how many pence is thirteen 10ps less than the total of two 50ps and nine 5ps? \_\_\_\_\_ p
  - Of 300 children in a school, 43% were boys.
    - What percentage were girls? a \_\_\_\_\_ %
    - How many boys were there in the school? b \_\_\_\_\_
  - 

Find the angle marked x. \_\_\_\_\_  $^\circ$
  - A bucket holds 5l when full. Find the quantity of water in litres and millilitres when the bucket is  $\frac{3}{4}$  full. \_\_\_\_\_ l \_\_\_\_\_ ml
  - Which of these fractions is
    - the largest a \_\_\_\_\_
    - the smallest? b \_\_\_\_\_


$\frac{3}{5}$   $\frac{3}{4}$   $\frac{7}{10}$   $\frac{13}{20}$
  - The attendance at a concert was 6843.
    - Approximate this number to the nearest thousand. a \_\_\_\_\_
    - Find the difference between the actual and the approximate numbers. b \_\_\_\_\_
  - Sophie's home is 850m from school. How far in kilometres does she walk in a week of five days, making one return journey each day? \_\_\_\_\_ km
  - 

A card 60cm by 40cm is cut into strips each 8cm wide.

    - How many strips are cut? a \_\_\_\_\_
    - Find the total length of the strips in metres. b \_\_\_\_\_ m
  - A box containing 60 marshmallows costs  $£3.68$ . Find the cost of 15 marshmallows. \_\_\_\_\_ p
  - | Dates of birth |           |
|----------------|-----------|
| Josh           | 1.02.2014 |
| James          | 1.10.2011 |

Find the age in years and months of Josh and James on 1 September 2030.

Josh \_\_\_\_\_ yr \_\_\_\_\_ mth

James \_\_\_\_\_ yr \_\_\_\_\_ mth
  - Through how many degrees does the minute hand of a clock turn in 10 minutes? \_\_\_\_\_  $^\circ$
  - How many centimetre cubes are needed to make this block? \_\_\_\_\_
- 

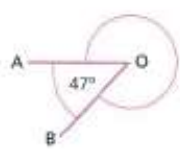

# SECTION 1 | Test 3

Schofield & Sims



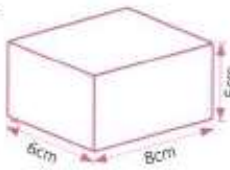
## A Answer

- Write as a decimal  $100 + \frac{3}{10} + \frac{7}{1000}$ . \_\_\_\_\_
- $4\frac{3}{4} \times 8 =$  \_\_\_\_\_
- $£2 - (35p + 63p) =$  £ \_\_\_\_\_
- $1\frac{1}{4}l - 900ml =$  \_\_\_\_\_ ml
- $3.8 - 2.76 =$  \_\_\_\_\_
- $35\% = \frac{\quad}{100} = \frac{35}{\quad}$
- $\quad g \times 100 = 4kg$  \_\_\_\_\_ g
- 7.43 a.m. to noon = \_\_\_\_\_ h \_\_\_\_\_ min
- $\frac{551mm}{7} =$  \_\_\_\_\_ cm \_\_\_\_\_ mm
- $830g \times 5 =$  \_\_\_\_\_ kg
- a 10% of £12.00 = \_\_\_\_\_ £  
b 70% of £12.00 = \_\_\_\_\_ £
- $\frac{2}{3}$  of £1.08 = £ \_\_\_\_\_

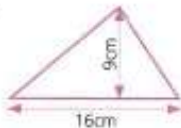
## B Answer

- Multiply the sum of 29 and 18 by 8. \_\_\_\_\_
- Decrease £3.50 by 20%. \_\_\_\_\_ £
-  Find the reflex angle AOB. \_\_\_\_\_ °
- How many times is 0.7m contained in 28m? \_\_\_\_\_
- How many days in 26 weeks? \_\_\_\_\_
- What percentage of 1kg is 550g? \_\_\_\_\_ %
- Find the time in hours and minutes from 09:40 to 13:25. \_\_\_\_\_ h \_\_\_\_\_ min
- What is the cost of 2.5kg at 18p per  $\frac{1}{2}$ kg? \_\_\_\_\_ p
-  What percentage of the circle is  
a shaded  a \_\_\_\_\_ %  
b patterned  b \_\_\_\_\_ %  
c plain?  c \_\_\_\_\_ %
- Approximate  
a 27.9km to the nearest kilometre a \_\_\_\_\_ km  
b 3.450kg to the nearest kilogram. b \_\_\_\_\_ kg
- 20 tennis balls cost £8.20. Find the cost of five. \_\_\_\_\_ £
- The area of a rectangle is 30m<sup>2</sup>. Its width is 2.5m. Find its length. \_\_\_\_\_ m

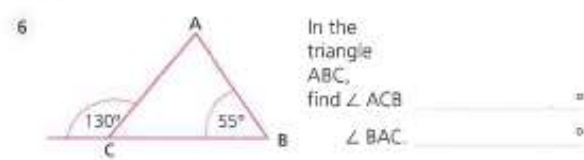
## C Answer

- A milkshake which cost 43p was paid for with a £1 coin. Which three coins were given as change? \_\_\_\_\_ p \_\_\_\_\_ p \_\_\_\_\_ p
- In the number 30.632, how many times is the 3 marked y less than the 3 marked x? \_\_\_\_\_
- Find the product of DX and V and write it using Roman numerals. \_\_\_\_\_
- Four children receive these amounts of money: 55p, 66p, 45p and 50p. Find the mean. \_\_\_\_\_ p
- A paddling pool contained 75l of water. 10% of it was wasted. Find in litres and millilitres the quantity which remained. \_\_\_\_\_ l \_\_\_\_\_ ml
-  ABC is an isosceles triangle. Find the angles at the base.  
∠ ABC \_\_\_\_\_ °  
∠ ACB \_\_\_\_\_ °
- {1, 2, 3, 6, 9, 18, 36}  
Two numbers are missing from this set of factors of 36. Which are they? \_\_\_\_\_ and \_\_\_\_\_
- A dog's mass increased from 40kg to 42kg. What was the increase  
a as a fraction a \_\_\_\_\_  
b as a percentage? b \_\_\_\_\_ %
- Which is the better buy, A or B, and by how much?  
A Eight 250g packs of rice at 45p per pack  
B 2kg of rice at £1.60 per kilogram \_\_\_\_\_ by \_\_\_\_\_ p
-  Find in centimetres the length of a diameter which is twice that of the given circle. \_\_\_\_\_ cm
- A tin of red paint costing £4.50 will cover 5m<sup>2</sup>.  
a How many tins must be bought to cover a wall 5m by 3m? a \_\_\_\_\_  
b What is the cost? b £ \_\_\_\_\_
-  48 centimetre cubes fit exactly into the bottom of this box. The box is 5cm deep.  
How many cm cubes are needed to fill it? \_\_\_\_\_

A	Answer
1 $7 \times 10^2 =$	_____
2 $\frac{3}{4} + \frac{1}{8} + 2 =$	_____
3 $100 - (8 \times 9) =$	_____
4 $0.085\text{l} =$ ml	_____ ml
5 $5.07 \times 6 =$	_____
6 $\text{£}27 + 100 =$ p	_____ p
7 $650\text{g} + 0.5\text{kg} =$ kg	_____ kg
8 $\frac{1}{20} = \frac{\quad}{100} =$ %	$\frac{\quad}{100} =$ %
9 $2\text{h } 37\text{min} + 1\text{h } 33\text{min} =$ h min	_____ h _____ min
10 75% of 30kg = kg g	_____ kg _____ g
11 $3 + 5 \times 2 =$	_____
12 a 18p = % of £1	a _____ %
b 45cm = % of 1m	b _____ %

B	Answer
1 Write as a decimal 3085 thousandths.	_____
2 From the total of 83p and £1.06 take 70p. £	_____
3 Find the product of 0.6 and 9.	_____
4 Find the total number of days in the months of September, October and November.	_____
5 When a number is divided by 9 the answer is $64 \text{ r } 5$ . What is the number?	_____
6 Three peaches cost 87p. Find the cost of two peaches.	_____ p
7 What fraction in its lowest terms is	
a 800g of 1kg	a _____
b 150ml of $\frac{1}{2}\text{l}$	b _____
8 How many times greater is 5030 than 5.03?	_____
9 a 20% of £8.50	a £ _____
b 60% of £8.50	b £ _____
10 Approximate	
a £1.095 to the nearest penny	a £ _____
b 9.150l to the nearest $\frac{1}{2}\text{l}$	b _____ l
11 0.5kg of grapes cost £1.50. Find the cost of 700g.	£ _____
12  Find the area of the triangle.	_____

C	Answer
1 The volume of a bucket is 1950cm <sup>3</sup> . How many litres of water does it hold? (1cm <sup>3</sup> = 1ml)	_____ l
2 A car travels 360km on 40l of petrol. How many kilometres per litre is this?	_____
3 $243 \times 15 = 3645$ Find a $2.43 \times 15$	a _____
b $24.3 \times 1.5$	b _____
4 The bill at the end of a meal came to £20.40. 10% was added as a service charge. How much was added?	£ _____
5 Buses run at intervals of 18min. Find the times of the next two buses after 09:37.	_____



7 The mass of a 10p coin is 6.5g. What is the mass in kilograms of £20 in 10ps?	_____ kg
8 A line 9cm long represents the distance flown by an aeroplane. If the line is drawn to a scale of 1mm to 50km, find the actual distance.	_____ km
9 Follow this number trail. start at 3 → subtract 7 → add 9 → subtract 12 →	_____
10 A rectangle measures 3m long and 70cm wide. Find its area in m <sup>2</sup> .	_____ m <sup>2</sup>
11 Seven lemons cost £2.80.	
a What fraction of £2.80 will three lemons cost?	a _____
b Find the cost of five lemons.	b £ _____
12 Point A is at (-2, 1). Write the coordinates of its reflection in the y-axis (the vertical axis).	(_____, _____)

