Mental methods (1)

- Calculating mentally with whole numbers
- Recalling fraction and decimal conversions
- Using known facts to derive unknown facts

Keywords

You should know

explanation 1

1 Find the change from £1 for these amounts.

a	30p	b	48p	c	58p	d	28p	e	6p
f	91p	g	12p	h	72p	i	37p	j	61p
k	£0.17	l	£0.84	m	£0.02	n	£0.38	o	£0.53

2 Work out how much change from £1 Carmel gets if she buys these items.

- **a** the can of drink
- **b** the chocolate bar
- **c** the crisps and the can of drink
- **d** all three items

45p   28p   22p

explanation 2

3 Find the product of each pair of numbers.

a	2 and 8	b	3 and 9	c	5 and 8	d	6 and 7	e	8 and 9
f	4 and 10	g	8 and 9	h	7 and 7	i	8 and 6	j	9 and 9

4 Write pairs of numbers that have each of these products.

a	10	b	28	c	50	d	75	e	100

5 Find the missing values in each calculation.

a $5 \times \square = 45$ **b** $7 \times \square = 56$ **c** $\square \times 9 = 36$

d $20 \times \square = 100$ **e** $\square \div 3 = 7$ **f** $63 \div \square = 7$

6 Copy and complete each multiplication grid.

a

×	5		3	
	20	8		
			18	
10				

b

×		7	
8			24
		49	
6	54		

explanation 3a   explanation 3b

You should answer the questions in this section without using a calculator.

7 Write these fractions as decimals.

a $\dfrac{1}{5}$ **b** $\dfrac{3}{4}$ **c** $\dfrac{7}{20}$

d $\dfrac{6}{25}$ **e** $\dfrac{3}{10}$ **f** $\dfrac{4}{5}$

g $\dfrac{9}{20}$ **h** $\dfrac{9}{10}$ **i** $\dfrac{13}{20}$

j $\dfrac{11}{25}$ **k** $\dfrac{2}{5}$ **l** $\dfrac{1}{25}$

8 Write each of the fractions in question **7** as a percentage.

9 Change these percentages to decimals.

a 10% **b** 45% **c** 5%

d 84% **e** 36% **f** 72%

g 12 % **h** 16% **i** 63%

10 Write each of the percentages in question **9** as a fraction.
Write each fraction in its simplest form.

explanation 4

11 8 × 4 = 32. Use this fact to work these out.

   a 80 × 4   **b** 800 × 4   **c** 80 × 40

   d 80 × 400   **e** 8 × 0.4   **f** 0.8 × 4

   g 0.8 × 0.4   **h** 80 × 0.04   **i** 800 × 0.4

12 9 × 7 = 63. Use this fact to work these out.

   a 90 × 7   **b** 90 × 70   **c** 90 × 7000

   d 9 × 0.7   **e** 0.9 × 7   **f** 0.9 × 0.07

   g 0.09 × 7   **h** 900 × 0.07   **i** 90 × 0.7

13 Use the first division in each row to work out the other divisions in the row.

   a 20 ÷ 4   **b** 200 ÷ 4   **c** 2000 ÷ 4   **d** 2 ÷ 4

   e 60 ÷ 5   **f** 600 ÷ 5   **g** 6000 ÷ 5   **h** 6 ÷ 5

   i 18 ÷ 2   **j** 1.8 ÷ 2   **k** 0.18 ÷ 2   **l** 0.018 ÷ 2

14 A carpenter needs 4 screws to fix one shelf.

How many screws will he need to fix
these numbers of shelves?

   a 10 shelves   **b** 100 shelves

   c 30 shelves   **d** 400 shelves

15 One DVD costs £7. How much will these cost?

   a 7 DVDs   **b** 5 DVDs   **c** 70 DVDs

   d 700 DVDs   **e** 75 DVDs   **f** 82 DVDs