

## I can mentally calculate problems involving decimals.

### Example

A room is 5.8 m long and 3 m wide.

What is its area?

Use rounding to approximate answer.

Approximate answer is  $(6 \times 3) \text{ m}^2$  or  $18 \text{ m}^2$

$$\begin{aligned} \text{Actual area of room} &= (5.8 \times 3) \text{ m}^2 \\ &= (5 \times 3) + (0.8 \times 3) \text{ m}^2 \\ &= (15 + 2.4) \text{ m}^2 \\ &= 17.4 \text{ m}^2 \end{aligned}$$

### A

- One side of a rectangle is 4.6 cm. The other side is 1.8 cm longer. What is the length of the longer side?
- A bag contains 2.5 kg of potatoes. 0.7 kg is used. How much is left?
- One can of fish weighs 0.3 kg. What do four cans weigh?
- A ribbon is 3.6 metres long. It is cut in half. How long are the two ribbons?
- A parcel weighs 1.9 kg. A second parcel weighs 1.3 kg more. What is the combined weight of the two parcels?
- A bottle of milk holds 2 litres. 1.4 litres is drunk. How much is left?
- A rectangular lawn is 10 metres long and 6.5 metres wide. What is its area?

### B

- Karl walks 2.3 km altogether going to and from school. How far from the school is Karl's home?
- One egg weighs 0.06 kg. What do six eggs weigh?



- A length of tape is 4 metres long. 2.54 metres is used. How much is left?
- Ahmet mixes 2.4 litres of white paint and 0.75 litres of red paint. How much pink paint has he made?
- One lolly has a capacity of 0.04 litres. What is the capacity of the four lollies in a pack?
- A rectangular room has an area of  $15 \text{ m}^2$ . It is 4 m long. How wide is the room?

### C

- A bucket holds 6.3 litres of water. 1.78 litres spills out. How much water is left in the bucket?
- One mile is 1.6 km. What is 12 miles in kilometres?
- The total weight of four identical boxes is 6.28 kg. What does one box weigh?
- Helena's direct route to school is 0.94 km. If she calls for her friend she walks 0.367 km further. How far is the longer route?
- Each tube of paint used by an artist holds 0.035 litres. How much paint is there in six tubes?
- A cake weighs 1 kg. It is cut into eight slices. What does each slice weigh?
- Large bags of cement weigh 37.25 kg. Small bags weigh half as much. What is the weight of a small bag?

I can find the missing number in an equation and check using the inverse operation.

*Examples*

$$0.328 + \square = 0.378$$

The missing number is 0.05.

Use the inverse operation to check.

$$0.378 - 0.05 = 0.328$$

$$7.5 \times \square = 300$$

The missing number is 40.

Use the inverse operation to check.

$$300 \div 40 = 7.5$$

## A

Copy and complete.

1  $\square + 2.68 = 2.98$

2  $\square - 1.27 = 0.02$

3  $\square \times 4 = 2.8$

4  $\square \div 10 = 0.03$

5  $5.2 + \square = 5.24$

6  $8.75 - \square = 8.15$

7  $4.3 \times \square = 43$

8  $20 \div \square = 0.2$

Copy and complete.

9  $\square + 1.43 = 4.39$

10  $1.68 + \square = 2.57$

11  $\square - 1.57 = 2.24$

12  $3.21 - \square = 1.68$

13  $\square \times 9 = 42.3$

14  $2.58 \times \square = 10.32$

15  $\square \div 6 = 0.77$

16  $8.7 \div \square = 2.9$

17 Find three quarters of 26.

18 Find two fifths of 19.

## B

Copy and complete.

1  $\square + 0.07 = 3.425$

2  $\square - 0.003 = 1.911$

3  $\square \times 6 = 3$

4  $\square \div 1000 = 0.09$

5  $5.273 + \square = 5.873$

6  $0.644 - \square = 0.604$

7  $0.732 \times \square = 73.2$

8  $5 \div \square = 1.25$

Use a calculator if needed.

9  $4.35 + \square = 6.24$

10  $\square + 1.47 = 3.31$

11  $8.38 - \square = 1.64$

12  $\square - 2.75 = 3.58$

13  $6.23 \times \square = 43.61$

14  $\square \times 9 = 22.77$

15  $26.08 \div \square = 3.26$

16  $\square \div 6 = 4.63$

17 Which number multiplied by itself gives:

- a) 1444    b) 4096.

## C

Copy and complete.

1  $\square + 0.14 = 0.371$

2  $\square - 1.005 = 2.888$

3  $\square \times 4 = 0.2$

4  $\square \div 5 = 0.006$

5  $9.217 + \square = 9.26$

6  $0.752 - \square = 0.45$

7  $1.7 \times \square = 85$

8  $48 \div \square = 0.024$

Use a calculator.

9  $(\square \times 7) - 5.96 = 16.3$

10  $(\square \div 7) + 2.16 = 4$

11  $(\square + 0.6) \times 8 = 5$

12  $(\square - 0.64) \div 16 = 1.21$

13  $(\square \times 90) + 4.9 = 13$

14  $(\square \div 24) - 0.81 = 0.065$

15  $(\square + 61.1) \div 35 = 4.92$

16  $(\square - 7.5) \times 0.4 = 17$

17 Find two consecutive numbers with a product of:

- a) 4556    b) 6972.

I can use a written method to add decimal numbers.

*Example*

$$19.56 + 6.247$$

19.56 rounds to 20

6.247 rounds to 6

Answer is about 26.

$$\begin{array}{r} 19.56 \\ + 6.247 \\ \hline 25.807 \\ \phantom{0}1 \phantom{0}1 \end{array}$$

Line up the decimal points.

## A

Copy and complete.

$$\begin{array}{l} \text{1} \quad 48.5 \\ + 34.8 \\ \hline \end{array} \quad \begin{array}{l} \text{6} \quad 9.37 \\ + 4.48 \\ \hline \end{array}$$

$$\begin{array}{l} \text{2} \quad 3.79 \\ + 1.84 \\ \hline \end{array} \quad \begin{array}{l} \text{7} \quad 36.8 \\ + 4.69 \\ \hline \end{array}$$

$$\begin{array}{l} \text{3} \quad 6.96 \\ + 2.7 \\ \hline \end{array} \quad \begin{array}{l} \text{8} \quad 15.68 \\ + 7.85 \\ \hline \end{array}$$

$$\begin{array}{l} \text{4} \quad 12.5 \\ + 5.96 \\ \hline \end{array} \quad \begin{array}{l} \text{9} \quad 45.74 \\ + 9.7 \\ \hline \end{array}$$

$$\begin{array}{l} \text{5} \quad 28.08 \\ + 6.39 \\ \hline \end{array} \quad \begin{array}{l} \text{10} \quad 87.46 \\ + 8.54 \\ \hline \end{array}$$



- 11** Flipper ate 16.7 kg of fish. Dolly ate 3.75 kg more. How much fish did Dolly eat?
- 12** A triathlete swims 0.85 km, runs 5.62 km and cycles 21.35 km. How far has she travelled altogether?

## B

Copy and complete.

$$\begin{array}{l} \text{1} \quad 27.35 \\ + 6.89 \\ \hline \end{array} \quad \begin{array}{l} \text{6} \quad 9.837 \\ + 1.695 \\ \hline \end{array}$$

$$\begin{array}{l} \text{2} \quad 5.786 \\ + 3.69 \\ \hline \end{array} \quad \begin{array}{l} \text{7} \quad 67.94 \\ + 59.8 \\ \hline \end{array}$$

$$\begin{array}{l} \text{3} \quad 7.96 \\ + 4.287 \\ \hline \end{array} \quad \begin{array}{l} \text{8} \quad 79.8 \\ + 6.53 \\ \hline \end{array}$$

$$\begin{array}{l} \text{4} \quad 6.957 \\ + 0.743 \\ \hline \end{array} \quad \begin{array}{l} \text{9} \quad 9.469 \\ + 5.15 \\ \hline \end{array}$$

$$\begin{array}{l} \text{5} \quad 86.5 \\ + 18.79 \\ \hline \end{array} \quad \begin{array}{l} \text{10} \quad 8.73 \\ + 0.295 \\ \hline \end{array}$$

- 11** There is 5.67 litres of water in a bucket. 0.575 litres of bleach is added. How much liquid is in the bucket?
- 12** Dwayne runs 400 m in 45.74 seconds. His time for the 400 m hurdles is 5.89 seconds slower. What is his 400 m hurdles time?
- 13** A delivery van is driven 85.35 km in the morning and 46.8 km in the afternoon. How far does it travel altogether?

## C

Set out as in the example.

$$\text{1} \quad 3.756 + 84.75$$

$$\text{2} \quad 46.73 + 6.959$$

$$\text{3} \quad 51.968 + 82.74$$

$$\text{4} \quad 847.9 + 0.689$$

$$\text{5} \quad 6.059 + 57.68$$

$$\text{6} \quad 29.62 + 189.4$$

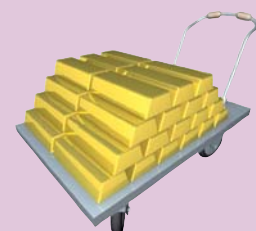
$$\text{7} \quad 5.834 + 38.76$$

$$\text{8} \quad 474.9 + 5.631$$

$$\text{9} \quad 36.569 + 28.07$$

$$\text{10} \quad 437.58 + 8.972$$

- 11** In one year London had 28.72 inches of rainfall and Glasgow had 16.489 inches more. What was Glasgow's rainfall?
- 12** A safe weighs 192.88 kg. The gold inside it weighs 268.45 kg. What is the combined weight of the safe and the gold?



I can use a written method to subtract decimal numbers.

Examples

$$2.427 - 0.683$$

Estimate

$$2.4 - 0.7 = 1.7$$

Answer is about 1.7

COUNTING UP

$$\begin{array}{r} 2.427 \\ -0.683 \\ \hline 0.017 \rightarrow 0.7 \\ 0.3 \rightarrow 1.0 \\ \hline 1.427 \rightarrow 2.427 \\ \hline 1.744 \\ \hline 1 \end{array}$$

DECOMPOSITION

$$\begin{array}{r} 2.5 - 1.73 \\ \begin{array}{r} 1 \quad 13 \quad 1 \\ \cancel{2} \cdot \cancel{4} \quad 2 \quad 7 \\ -0.683 \\ \hline 1.744 \end{array} \end{array}$$

$$\begin{array}{r} 2.5 - 1.73 \\ \begin{array}{r} 1 \quad 14 \quad 1 \\ \cancel{2} \cdot \cancel{5} \quad 0 \\ -1.73 \\ \hline 0.77 \end{array} \end{array}$$

Put in the missing zero.

## A

Copy and complete.

$$\begin{array}{l} \text{1} \quad 37.4 \\ \quad -16.8 \\ \hline \end{array} \quad \begin{array}{l} \text{6} \quad 7.35 \\ \quad -5.88 \\ \hline \end{array}$$

$$\begin{array}{l} \text{2} \quad 48.5 \\ \quad -23.7 \\ \hline \end{array} \quad \begin{array}{l} \text{7} \quad 6.38 \\ \quad -2.76 \\ \hline \end{array}$$

$$\begin{array}{l} \text{3} \quad 60.9 \\ \quad -34.5 \\ \hline \end{array} \quad \begin{array}{l} \text{8} \quad 4.80 \\ \quad -1.37 \\ \hline \end{array}$$

$$\begin{array}{l} \text{4} \quad 73.7 \\ \quad -29.3 \\ \hline \end{array} \quad \begin{array}{l} \text{9} \quad 3.94 \\ \quad -1.67 \\ \hline \end{array}$$

$$\begin{array}{l} \text{5} \quad 59.2 \\ \quad -48.6 \\ \hline \end{array} \quad \begin{array}{l} \text{10} \quad 9.23 \\ \quad -4.56 \\ \hline \end{array}$$

- 11** When she was born Lily weighed 3.69 kg. Five months later she weighed 6.25 kg. How much had her weight increased?



## B

Copy and complete.

$$\begin{array}{l} \text{1} \quad 4.16 \\ \quad -2.39 \\ \hline \end{array} \quad \begin{array}{l} \text{6} \quad 0.583 \\ \quad -0.256 \\ \hline \end{array}$$

$$\begin{array}{l} \text{2} \quad 35.1 \\ \quad -29.3 \\ \hline \end{array} \quad \begin{array}{l} \text{7} \quad 3.390 \\ \quad -2.618 \\ \hline \end{array}$$

$$\begin{array}{l} \text{3} \quad 5.32 \\ \quad -2.85 \\ \hline \end{array} \quad \begin{array}{l} \text{8} \quad 1.416 \\ \quad -0.273 \\ \hline \end{array}$$

$$\begin{array}{l} \text{4} \quad 82.6 \\ \quad -38.9 \\ \hline \end{array} \quad \begin{array}{l} \text{9} \quad 8.675 \\ \quad -3.279 \\ \hline \end{array}$$

$$\begin{array}{l} \text{5} \quad 3.51 \\ \quad -2.93 \\ \hline \end{array} \quad \begin{array}{l} \text{10} \quad 7.350 \\ \quad -6.974 \\ \hline \end{array}$$

- 11** A rope is 6.35 metres long. 2.79 metres is cut off. How long is the rope that is left?
- 12** A parcel weighs 1.255 kg. A second parcel weighs 0.672 kg less. What is the weight of the lighter parcel?
- 13** A jug holds 3.75 litres of orange. 1.275 litres is drunk. How much is left?

## C

Set out as in the examples.

**1**  $14.32 - 6.5$

**2**  $3.21 - 0.526$

**3**  $4.319 - 2.74$

**4**  $8.13 - 1.642$

**5**  $27.4 - 9.65$

**6**  $3.625 - 0.79$

**7**  $80.2 - 13.75$

**8**  $5.82 - 2.458$

**9**  $36.5 - 1.79$

**10**  $9.42 - 0.785$

- 11** A bath holds 64.38 litres of water. 0.725 litres evaporates. How much water is now in the bath?
- 12** Casey weighs 42.1 kg. Tanya is 3.54 kg lighter. What does Tanya weigh?
- 13** A racing car completes its first lap in 91.4 seconds. Its second lap is 2.66 seconds faster. How long does the second lap take?

## I can solve multi-step word problems.

### Example

A bike costs £139. In a sale the price is reduced by 20%. What does the bike cost in the sale?

$$20\% = \frac{1}{5}$$

$$£139 \div 5 = £27.80$$

$$£139 - £27.80 = £111.20$$

The sale price is £111.20



### A

- 1 A ball of string is 15 m long. 4.3 m is cut off. A further 1.25 m is cut off. How much string is left?
- 2 A box holding 10 cans weighs 3.8 kg. The box weighs 0.2 kg. How much does each can weigh?
- 3 A greengrocer has seven boxes each containing 40 red apples. He also has five boxes of green apples. There are 400 apples altogether. How many green apples are there in each box?
- 4 Hazel buys three cards and a book for £5.34. The cards cost 45p each. How much does the book cost?
- 5 At 6 pm the temperature is 2°C. By midnight it has fallen 5°C. Between midnight and 6 am it rises 2°C. What is the temperature at 6 am?

### B

- 1 Gill has 1.2 kg of flour. She uses 0.45 kg to make bread and 0.28 kg for pastry. How much flour does she have left?
- 2 Aaron buys four drinks at 65p each and two sandwiches at £1.35 each. How much change will he receive from £10?
- 3 The perimeter of a room is 21.2 metres. One wall is 4.6 m long. What is the area of the floor?
- 4 The temperature in London is 3°C. In Leeds it is 4° colder. In Scotland it is 3° colder than in Leeds. What is the temperature in Scotland?



- 5 How many minutes are there in two weeks?

### C

- 1 A carpet costs £24 per square metre. How much will it cost to carpet a room 5 m long and 3.86 m wide?
- 2 Ashley won a race in 57.92 seconds. Adam was 1.48 seconds slower and Robert was 0.69 seconds behind Adam. What was Robert's time?
- 3 In one year in Siberia the highest temperature was 26°C and the lowest was -42°C. In London the highest temperature was 33°C and the range of temperature was one half of that in Siberia. What was the lowest temperature in London?
- 4 Small cans weigh 0.375 kg. Large cans weigh 0.725 kg. What is the total weight of four small and three large cans?
- 5 Cheese costs £4.20 for 1 kg. What does 350 g cost?