Quick revision reminders
L1 numeracy / maths

The four operations (+, -, x, ÷)

Remember that multiplication is just repeated addition. You can work out division with repeated subtraction.
3 x 2.5 metres is the same as 2.5 + 2.5 + 2.5 metres. You can work out any multiplication question in this way.
Division as repeated subtraction: 20 divided by 5 is the same as 20 – 5 =15, 15 -5 =10, 10 -5 = 5. 5-5 = 0.
You subtract 5 <u>four</u> times to get to zero from 20 so the answer is 4.
You can work out any division question in this way.
Division is the reverse of multiplication. If 3 x 2.5 = 7.5, 7.5 divided by 3 must be 2.5.
In the same way, you can work back any division question to find out how many multiples make up the answer. What is 20 divided by 5 is the same question as how many 5s add up to make 20?
Four 5's add up to make 20. If you are not sure of divisions, you can work out the number needed, 4, as the number you need to multiply 5 by to get 20.

Rounding and Estimating

For rounding and estimation remember that 5 or above rounds up, anything below that rounds down. So £3.49 to the nearest pound is £3, £3.50 to the nearest £ is £4.00.
£449 to the nearest £10 is £450 (the 9 makes it nearer £450 than £440)
£449 to the nearest £100 is £400, £450 to the nearest £100 is £500. And so on.
E.g. Round 54 419 to the nearest hundred. This is fifty four thousand four hundred and nineteen.
19 is the number we look at to decide whether to round up or down. 19 is nearer 400 than it is 500. We look at the tens to decide whether or not to round up or down to the nearest hundred.
Remember that five and above rounds up – 450 would round up to 500, 449 would round down to 400. 54 400 is the answer.
Another example: What is £48,475 to the nearest £1000 (thousand)? The figure given is forty eight thousand four hundred and seventy five pounds. You need to work it out to the nearest thousand. We look at the hundreds figure. Because the hundreds figure is under £500 it rounds down to 48 000 rather than up to 49 000 5 and above rounds up, 4 and below rounds down. So the figure rounds down to £48 000.

Ratios

Ratios are always written with a colon : between the numbers and no units. Remember that all the parts in a ratio add up to a whole. So pastry made with a ratio of 2 parts flour to 1 part fat has 3 parts in total. If you have 100 g of flour you will have to have 50 g of fat, twice as much flour as fat, adding up to 150 g of pastry. The ratio of flour to fat is written as 2:1. The ratio of fat to flour is written as 1:2. How much fat is needed to make 600g of pastry in this 1:2 ratio of fat to flour? If you divide 600g by 3 you will find out how much one part of the ratio weighs. 600 divided by 3 is 200 (to check this, 3 x 200 is 600) so one part weighs 200g. So 600g of pastry made with a 1 to 2 ratio of fat to flour will use up 200g of fat and 400g of flour.
Another type of ratio question.
A restaurant has a ratio of men to women workers in the ratio 2:3 . If there are 35 workers on the pay roll, how many are men and how many women?
2 men + 3 women = 5 workers. Out of every 5 workers 2 will be men and 3 will be women in the ratio 2:3. The number of men comes first in this ratio. So keeping the proportions, out of every 10 workers, 4 will be men and 6 will be women. Out of 20 workers the ratio would 8:12 (this simplifies to 2:3). Remember, the ratio is men to women, the number of men must come first. If there are 30 workers the ratio is 12:18. 35 workers would be 14:21. Check to see the two numbers in your ratio of 14:21 add up to 35 – they do. What is the ratio of women to men? It is 3:2. From a workforce of 35 the ratio is 21:14 women to men.

Percentages.

A percentage is a fraction of 100. To work out percentages the easiest thing to do is to find 10% and 1%. To find 10% of any amount you divide it by 10. 10% of £38.00 is £3.80. (Move the 8 one place to the other side of the decimal point). 5% of £38.00 is half of 10%. 10% is £3.80. Half of £3.80 is £1.90. To make dividing easy work out half of £3, then half of 80p then add them together. £1.50 is half of £3, 40p is half of 80p £1.50 + 40 = £1.90. 1% of £38.00 is 0.38p. (Move the 3 and the 8 two places, past the decimal point).
Percentage and fraction equivalents: 75% = 3/4 (three quarters), 50% = 1/2 (a half), 25% = 1/4 (a quarter).

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Measure, shape and space

Perimeter - you add up the length of all four walls of a room or the edges of a sports pitch. Remember the word RIM - you measure round the edge or rim.

A room with one wall of 5 metres and one wall of 4 metres has a perimeter of 18 metres 5+5+ 4+4. =18

Area is measured in square units, e.g. square metres, written m^2. A room measuring 3 metres long by 2.5 metres wide will have an area of 3 x 2,5 metres. That's 7.5 metres.

Remember that multiplication is just repeated addition. 2.5+2.5+2.5 is the same as 3 x 2.5

Volume is length x width (breadth) x height (depth). Measured in cubic units, e.g. cubic metres m^3.

You are asked to find the volume of a little box measuring 6 centimetres long x 4 centimetres deep x 4 centimetres high. 6 x 4 is 24 (check with repeated addition) 24 x 4 is 96 (add up to make the sum easier). The volume of the box is 96 cubic centimetres. 96cm3

Metric equivalents.

Length. There are 10 millimetres (mm) in 1 centimetre. Your thumb is about 5 centimetres long.

There are 100 centimetres (cms) in 1 metre (m). A doorway is just over 2 metres high, usually.

There are 1000 metres in a kilometre. (km) We measure long distances in kilometres.

Weight. There are 1000 grams (g) in 1 kilogram (kg). A bag of sugar is 1 kilo. A letter in an envelope weighs about 50 grams.

Capacity (liquids). There are 1000 millilitres (ml) in a litre. A teaspoon of liquid is 5ml.

A small bottle of water may be 300 ml. A large bottle of pop may be 2 litres.

Average and range

Mean average - you add all the numbers together, then divide by how many numbers there are.

If the total is 350.0 and it has to be divided by 10, the average is 35.0 - the number moves to the right of the decimal point.

Remember your times tables to help with division. Here is an example of division to find a mean.

You need to divide £15.80 by 5(items) to find the average price. Write out your division sum.

5 divides into 15 3 times.
Write 3 down above the 15.80.
5 divides into 8 1 time with 3 left over
Write 1 down next to the 3
Put the 3 left over in front of the 0 to make 30
5 divides into 30 6 times
The answer is £3.16

A checking method: Divide £15.80 by 10 to give £1.58
Then double it to give the answer divided by 5, £3.16.
Another check: If you add £3.16 up 5 times the answer is £15.80
Remember that division is the reverse of multiplication.

Range. For the range you subtract the lowest from the highest number.
E.g. The range of the numbers 1, 2, 3, 4, 5 is 5 - 1, which is 4.

A number of prices is given in a question. You are asked to find the range.
Range is the difference between the highest and lowest number. Find the highest price, then find the lowest price. The highest price is £3.50
The lowest price is £2.90 Take the lower price away from the highest price to give the difference (range). The range is 60p.

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FUNCTIONAL MATHEMATICS MAPPING Coverage and Range statements (indicative only)
This resource is ideal for revising many Functional Maths coverage and range statements at Level 1 and Level 2 (see ticked areas of the table below). Coverage and range statements provide an indication of the type of mathematical content candidates are expected to apply in functional contexts. Relevant content can also be drawn from equivalent National Curriculum levels & Adult Numeracy standards. Ofqual (2009), *Functional Skills criteria for Mathematics: Entry 1, Entry 2, Entry 3, level 1 and level 2.* http://www.ofqual.gov.uk/

Level 1

a) understand and use whole numbers and understand negative numbers in practical contexts ✓

b) add, subtract, multiply and divide whole numbers using a range of strategies ✓

c) understand and use equivalences between common fractions, decimals and percentages ✓

d) add and subtract decimals up to two decimal places

e) solve simple problems involving ratio, where one number is a multiple of the other ✓

f) use simple formulae expressed in words for one or two-step operations

g) use data to assess the likelihood of an outcome

h) solve problems requiring calculation, with common measures, including money, time, length, weight, capacity & temperature ✓

i) convert units of measure in the same system ✓

j) work out areas and perimeters in practical situations ✓

k) construct geometric diagrams, models and shapes

l) extract and interpret information from tables, diagrams, charts and graphs

m) collect and record discrete data and organise and represent information in different ways

n) find mean and range ✓