

Using a Calculator

12.1 Self Evaluation

Do any of these apply to you?

I have never used a calculator. Yes No

I don't understand what all the keys can do. Yes No

I cannot use the memory. Yes No

If I could use a calculator, I would not make mistakes. Yes No

I cannot do percentages on a calculator. Yes No

12.2 Main Keys

Calculators come in a variety of designs. Here are some of the common keys to compare with your own machine.

The **digit** keys: These are the keys with the numbers .

The **operations** keys:

The **decimal point** key:

The **equals** key:

In some calculators one key may have 2 uses with a legend appearing above the key as well as on the actual key. For example the $\frac{1}{x}$ key may also be the $\%$ key. This means that before you use it as a $\%$ key you have to press another key to convert it to its alternative use.

12.3 Clearance Keys

The **clearance** keys are used to correct one entry eg if you put 7 when you mean 8 **or** to clear your calculator completely. Your calculator may have one of the following arrangements of clearance keys:

Keys To Clear

c

c

Your calculator should have instructions. It is worthwhile studying these and experimenting with simple calculations so that you can verify the answers, eg try 3×4 before you tackle 3472×3914 .

12.3 For Basic Operations with Whole Numbers

Remember:

1 Always clear your calculator before you start.

2 Always press an operations key between the numbers you are entering.

Example Operation Read Out

12.4 Decimal Point

Sometimes my calculator tells me more than I want to know.

If you ask your calculator to divide 1551 by 66 you will see in the display 23.5. The figures on the left of the decimal point show how many whole numbers are in the answer. The figures to the right of the decimal point are a fraction written in the form of decimal places. Often you don't need all the decimal places so you adjust to the number of places you do need. To do this, look at the figure in the next place on the right of where you want to stop. If it is 5 or more, increase your final figure by 1. If it is less than 5 ignore it.

For example:

3.65 to **one** decimal place is 3.7

3.62 to **one** decimal place is 3.6

2.687 to **two** decimal places is 2.69

2.684 to **two** decimal places is 2.68

Example:

When you calculate $399 \div 52$ the display unit shows 7.6730969. Written to 2 decimal places your answer is 7.67.

When calculations involve decimal fractions from the start you press keys:

Example Operation Read Out

12.5 Money

We work in £'s so anything costing a number of pence must be entered as a decimal fraction of a £.

$$34\text{p} = \text{£}0.34$$

$$50\text{p} = \text{£}0.50$$

$$5\text{p} = \text{£}0.05$$

$$245\text{p} = \text{£}2.45.$$

Some calculators do not show a final 0 so remember to write it in your answer.

$$\text{Example: } \text{£}10.00 \div 4 = 2.5 = \text{£}2.50.$$

12.6 Order of Operations

Remember that when there is more than one operation to be done the **order** in which you do them is important.

Rules:

1 If there are brackets () calculate figures inside them first.

2 Next \times and \div .

3 Then $+$ and $-$.

Remember: '**Bodmas**' ie brackets and 'of' before division and multiplication before addition and subtraction.

Example Operation Read Out

12.7 Memory

Calculators with a Memory

Suppose you want to calculate the total cost of:

8 plants at £1·45.

12 plants at £2·76.

14 plants at £0·40.

With any calculator you can:

a Work out the answer for each item.

b Write down the answers yourself.

c Use the calculator to total these.

If your machine has a **memory** you do not have to write anything down. The calculator will store the item in the memory until you need it.

Keys which control the memory have **M** on them, but different machines have different keys so you may have to experiment.

M+ adds number from display into memory.

M- subtracts number in display from number in memory.

MR or RM recalls number from memory back into display.

MC or CM clears memory. Some machines clear memory by pressing RM twice.

So to calculate how much the plants cost **in our example**:

Press $1.45 \times 8 = M +$

$2.76 \times 12 = M +$

$0.4 \times 14 = M + MR$

The M + key at the end of each line adds the answer into memory.

The MR key at the end brings the total from the memory into the display.

12.8 Using the % Key

You can use your calculator to do percentages whether it has a % key or not.

Examples **with a % key**:

a If you want to express in percentage form press . The answer is 20%.

b If you want to find out 20% of £600 press $600 \times 20\%$. The answer is £120.

c If you want to calculate VAT on £60 press $60 \times 17.5\%$. The answer is £10.50.

Examples **without a % key**:

a as a percentage press .

b 20% of £600 press .

c VAT on £60 press.

12.9 Common Fractions

Most calculators work in decimals so you cannot enter $\frac{a}{b}$ directly. To change $\frac{a}{b}$ to a decimal press $\frac{a}{b}$.

If you are dealing with **mixed number** calculate the fraction first and then add the whole number.

12.10 Averages

A racing car made 5 laps of a circuit. The times for each lap were 72 seconds, 73.5 seconds, 71.8 seconds, 71.4 seconds, 71.3 seconds.

To find out the average speed per lap for these 5 laps:

Press

Average speed per lap is 72 seconds.

PS Have you switched off your calculator?

It is very important that you practise those operations which are new to you or those that you feel less confident about using. By practising many people find that using a calculator becomes second nature to them.

Warning!

A calculator can only do what you tell it. The calculator is never wrong. If your answer is wrong, **you** have given it` the wrong instructions.