

The Basics

Math Lit

SEARTEC 

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What's the plan for today?

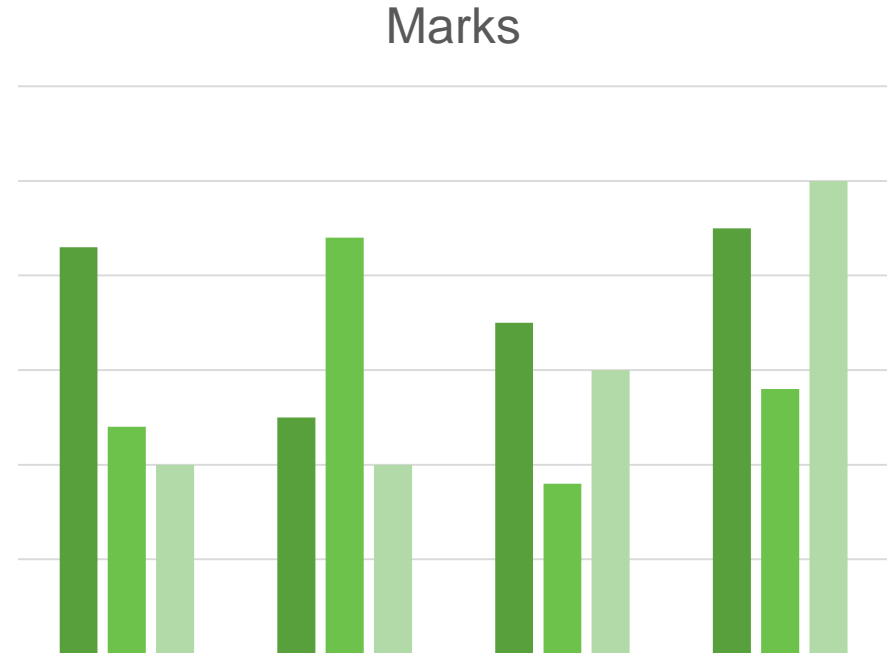
- Short cut for class marks
- Percentages
- Fractions
- Dice
- Substitution
- Time
- Pythagoras
- Statistics

Modes



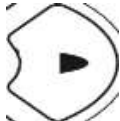
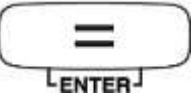
- There are 4 different modes:
- Normal
 - Which has things like a shortcut for converting to class marks, a random function, prime factorization, shortcut for Pythagoras, etc.
- Stat
 - An easy to use statistics function – no long sequence of keys
- Drill
 - This allows students to practice their times tables and other math basic (addition, subtraction and division as well)
- Table
 - Allows a function to input and gives back coordinate pairs, but can also be used to find factors of a number and to teach financial maths.

Shortcut for Class marks

- If you want to convert between the total of your test or exam to another total.
- E.g. If you have an test out of 40 and want to work out percentages.
- You are converting from 40 to 100


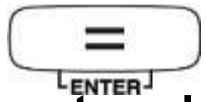
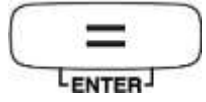
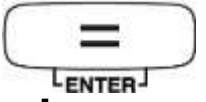


Class marks cntd.

- Press 
- What you are converting too goes on top (e.g. 100)
- Press 
- What you are converting FROM goes at the bottom (e.g. 40).
- Press 
- Type in the first students mark, e.g. 33 and press 



Class marks cntd.

- To change the mark to a decimal press the  key twice.
- Now, without pressing anything else, just type in your next student's mark, e.g. 25 and 
- Continue to do this, mark  mark  until you have finished your class list 😊



Percentages – Of a total

- What is 25% of 250 for example.
- Type in 250
- \times
- 25 **2ndF** $\frac{\%}{1}$
- This should give you an answer of $62 \frac{1}{2}$.



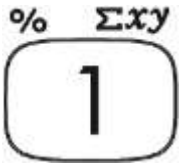


Percentages – Adding

- If we want to add 25% to 250 – there is a short cut.
- Type in 250
- $+$
- 25 **2ndF** $\%$ 1
- The answer should be $312 \frac{1}{2}$


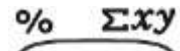




Percentages – Subtracting

- You are given a discount of 30% on a pair of R300 jeans, how much do they cost?
- Type in 3 0 0
- 
- 30  
- And you should get an answer of 210.



Percentages – Finding the original value


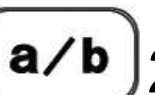





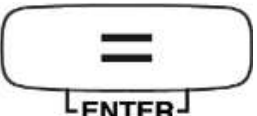
- E.g. a coke costs you R13.00, what was the price before VAT was added?
- Type in 13
-   
- Which should give you a price of R11,40 (press  to get to decimals)



Fractions



- Let's add a mixed number and improper fraction together:

- E.g. $\frac{5}{2} + 3\frac{3}{4}$

- Press  5  2
-   3  
- 3  4 


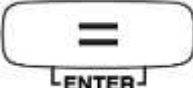
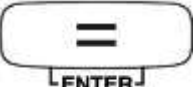


Random Function

- Press  
- There are four options
 - 0: RAND – random decimals to three decimal places
 - 1: R-DICE – the random numbers (1 – 6) of a dice.
 - 2: R-COIN – like a coin but instead of heads and tails you get 0's and 1's.
 - 3: R-INT – random whole numbers between 0 and 99



Random Function

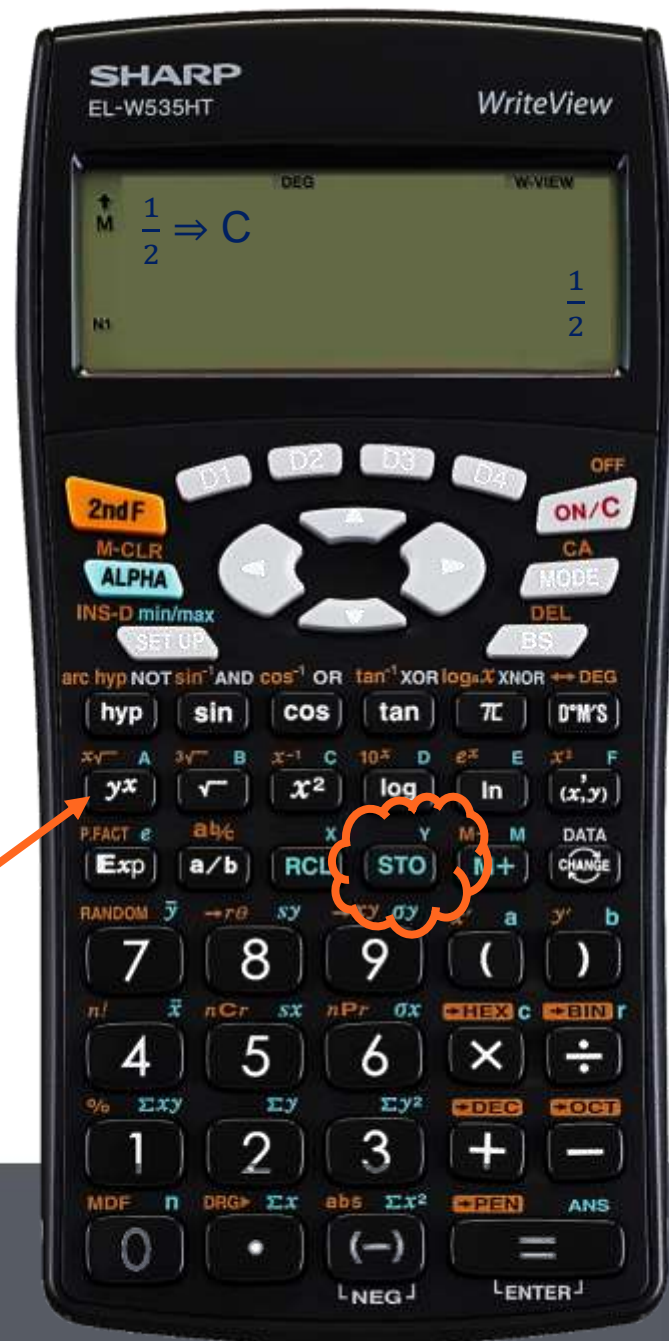
- Now choose what you would like to use by pressing the number (e.g.  for dice)
- Press  to roll the die.
- Remember you won't have the same answer as the numbers are generated randomly and don't have a set sequence.
- Keep pressing  to continue rolling the die.



Substitution

- Press $\frac{1}{2}$.
- Let's say that $a = 2$, $b = -3$ and $c = \frac{1}{2}$.
- To store these on the calculator:

- Press 2 **STO** y^x
- **(-)** 3 **STO** $\sqrt{\quad}$
- 1 **a/b** 2 **STO** x^{-1}



Substitution

- Now we can type in the expression for example:

$$3a^2 - 2b + 4c$$

- Press 3 **ALPHA** y^x x^2

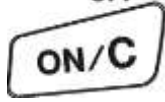

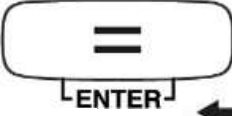


- $-$ 2 **ALPHA** $\sqrt{\quad}$

- $+$ 4 **ALPHA** x^{-1} x^2



Time calculations

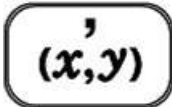



- Speed, distance, time.
- To find time, for example – travel 400km at a speed of 115km/h, how long does it take?

- Press 
- 400 
- 115 
L'ENTER'
-  



Answer – 3
hours, 28
minutes and
41.739 seconds

Pythagoras Shortcut!

- This only works if we are looking for the hypotenuse of a right-angled triangle.
- Type in the shorter sides (or x and y values) of the triangle, e.g. our triangle has sides 6 and 8, so we type in 6 then  $\rightarrow r\theta$ 
- Now press  
- This gives us the hypotenuse (r) and the angle (θ) the hypotenuse makes with the base.

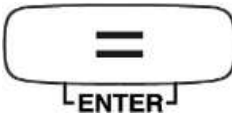



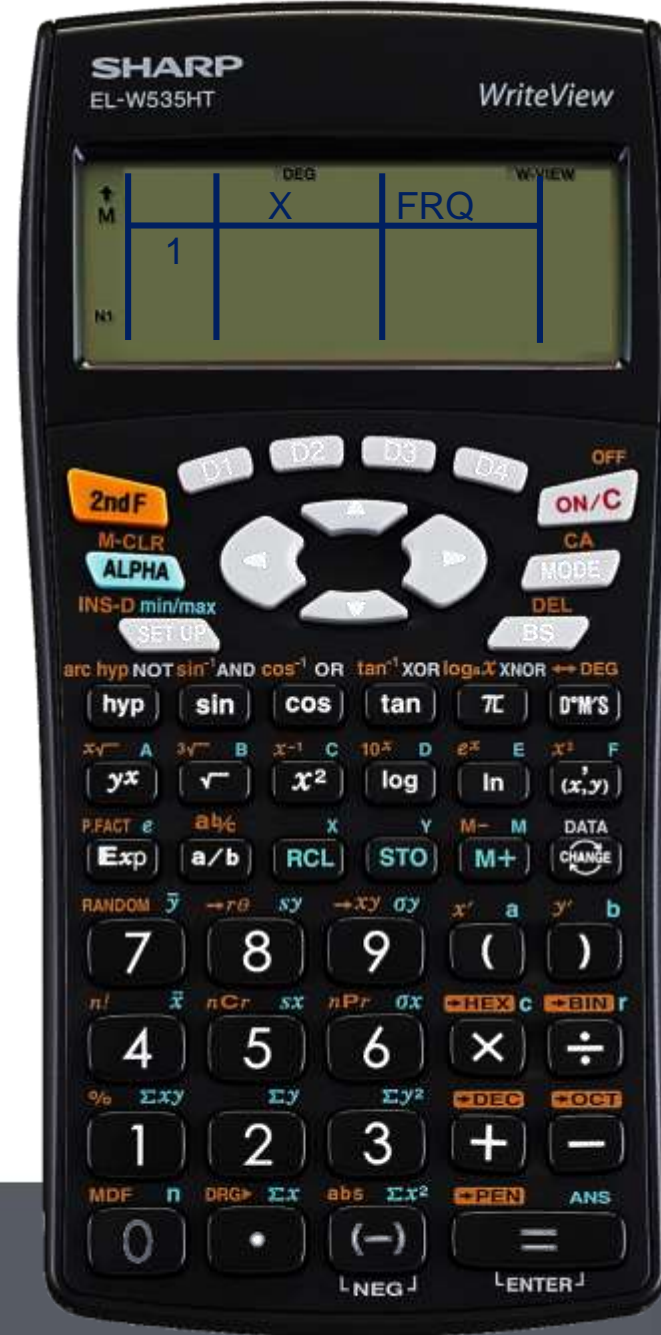
Statistics

- Easy to use – just two buttons
- Use the green **ALPHA** key and any of the keys from 1 – 9 and the operations to find any statistics value you want.
- Press **MODE** and choose 1

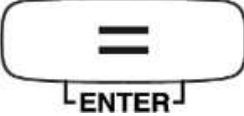



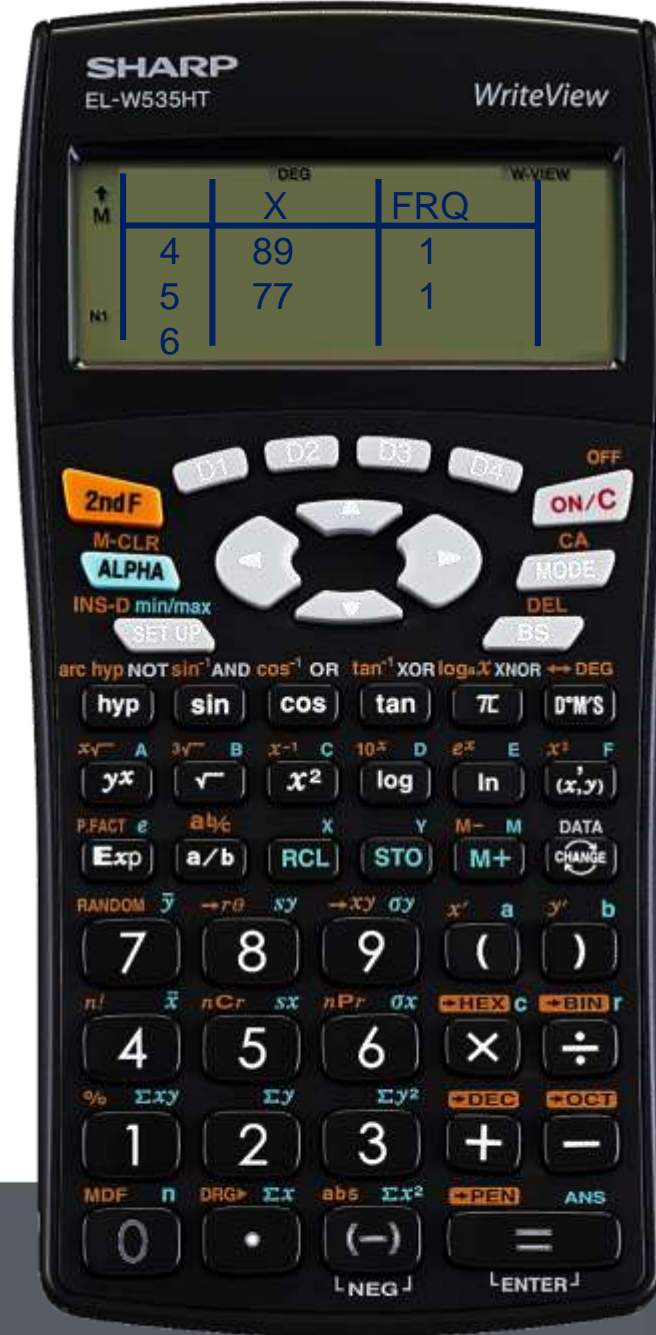
Basic Statistics – Univariate Data

- Choose 0 for SD (it means Single data).
- You should see a table with an X column and a FRQ (frequency) column.
- Type in the data value and press  after each one.
- Press  to change over to the calculation screen.



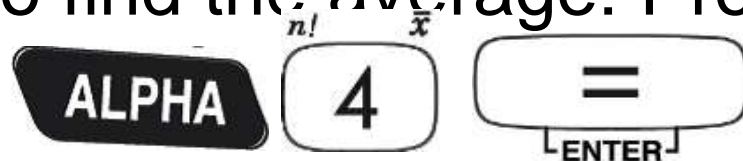
Basics Continued

- Example: Mary gets the following 5 marks back for maths: 83, 46, 65, 89, 77
- Type in each mark and press  afterwards.
- Press  to start the calculations.



Basics Continued

- To find the average: Press



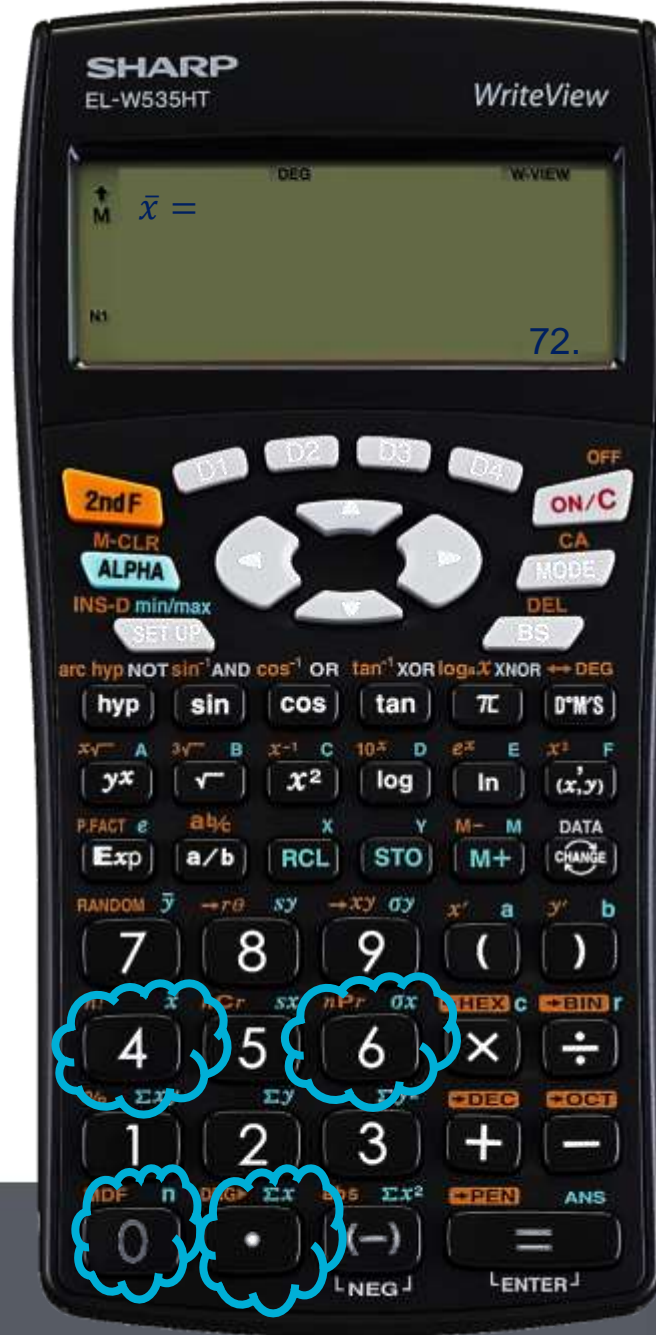
- To find the standard deviation: Press



- To find the number of observations: Press



- To find the sum of all the marks: Press

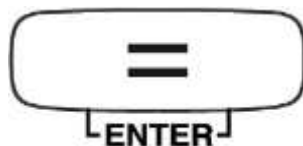


Basics Continued




- You can find the minimum and maximum values in the data as well.

- Press **ALPHA** **SET UP**

- Choose either 0 for the minimum, or 1 for the maximum and then press



Don't forget the competition 😊

- Drill mode (Press  2 0)
- Choose 25 questions (press )
- Choose + - x ÷ (press )
- Fastest time this week wins a microwave 😊



Thank you 😊

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