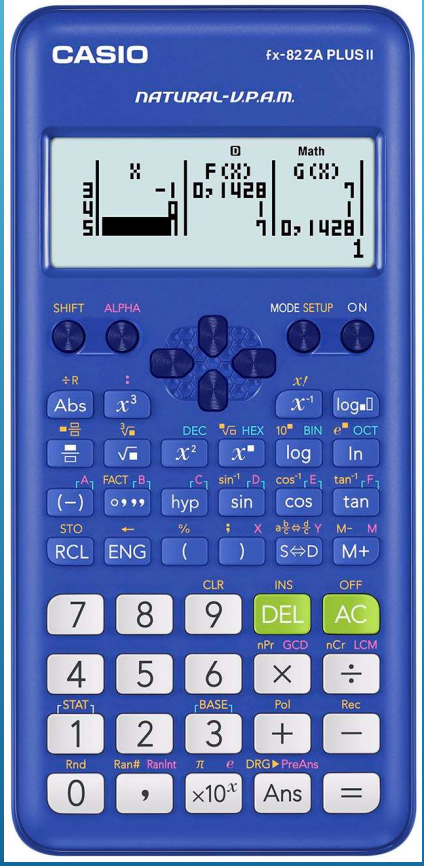
CASIO

JAMES RALPH (PTY) LTD

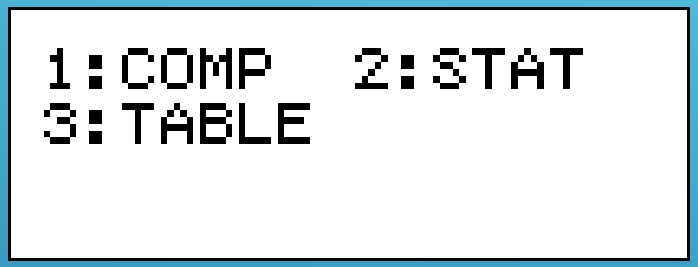
FX 82 ZA PLUS II



FX 991 ZA PLUS II

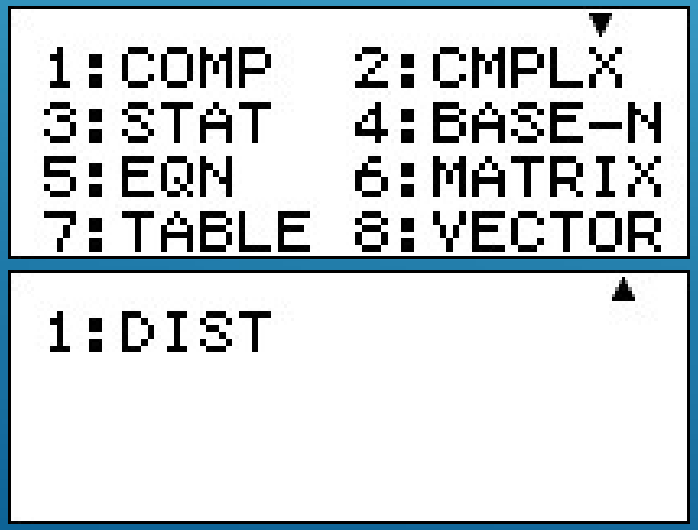
NEW MODES:

FX 82 ZA PLUS



FX 82 ZA PLUS II

FX 991 ZA PLUS

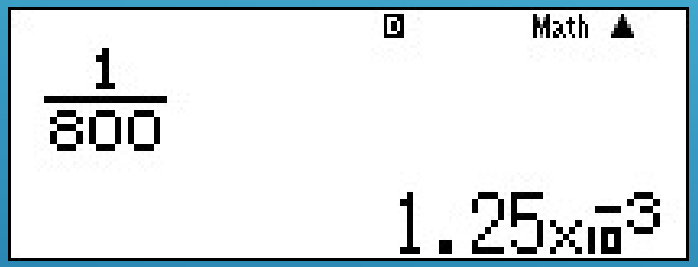


FX 991 ZA PLUS II

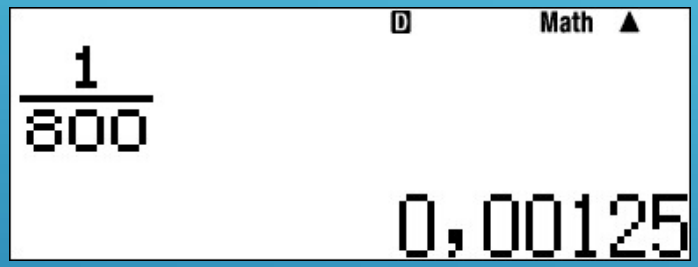
A Few Changes Have Been Made:

Norm 2 is now the default setting for the calculator.
This means that all answers will be in decimal format and not scientific notation.

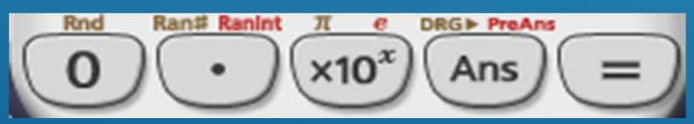
FX 82 ZA PLUS/ FX 991 ZA PLUS

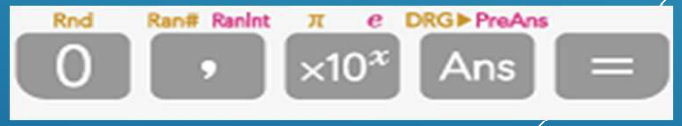


FX 82 ZA PLUS II/ FX 991 ZA PLUS II



The dot has also been changed into a comma on the display and on the calculator.

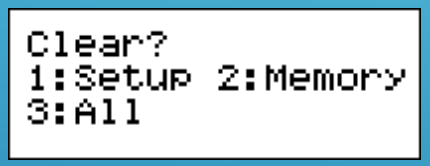




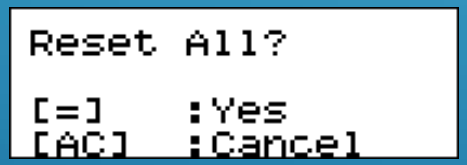
We still need to always check that our calculator is setup correctly and in the right mode.
A common mistake is that learners do not clear or reset their calculators before using them

To reset:

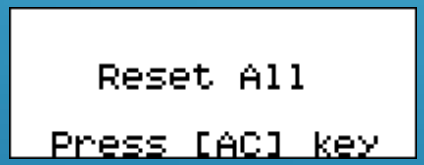
SHIFT 9



Select Option 3: All



Press =



Press AC

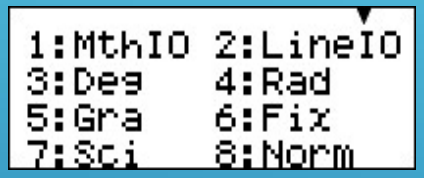
Rounding Off:

We are able to set our calculator to round off to a set number of decimal places.

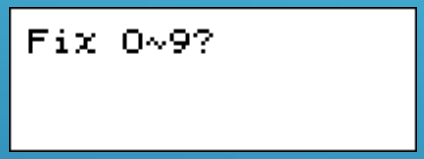
Eg: $\frac{2}{3} =$ _____ **(Round your answer to 2 decimal places)**

Find your place
Look next door
5 or greater, add one more
All digits in front stay the same
All digits behind, zero's your name

Step 1: SHIFT MODE



Step 2: Choose Option 6:

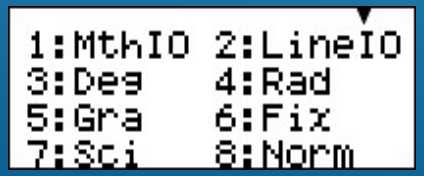


Step 3: Choose how many decimal places you want the answer to be rounded off to.
We want 2 decimal places so Press 2

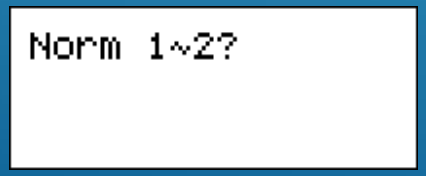
Step 4: Press S⇔D

Note the word FIX on the top of your screen. From now on every answer will be rounded to 2 decimal places. Go back to Norm Mode 2 to return back to normal.

SHIFT MODE

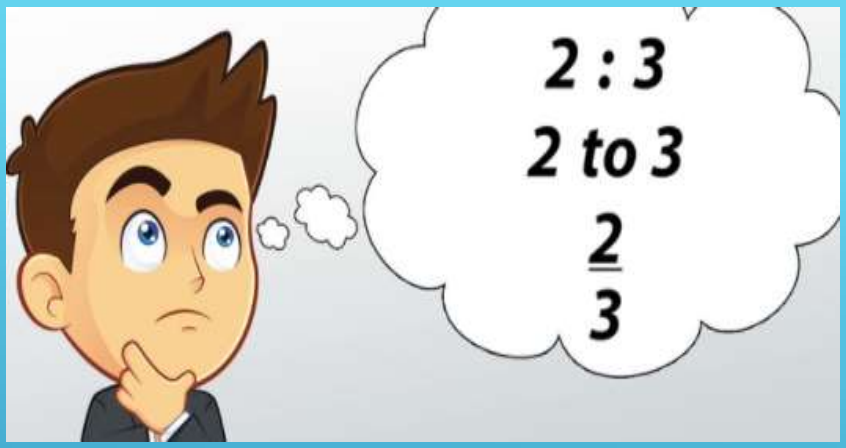


8: Norm



We Select Option 2 for Maths.

New Features:



1) RATIO MODE:

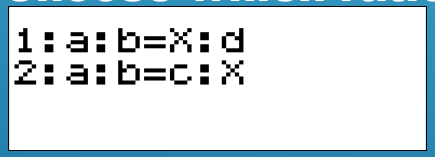
Just some of the things we can do using ratio mode

- **Write ratios in the form n:1**
- **Finding the lengths of similar triangles**
- **Work out the cost of different amounts etc**

Eg: If 1.5kgs of potatoes cost R12.50. How much will 5kgs cost?

Step 1: Go into ratio mode. MODE ▼ 3

Step 2: Choose which ratio type you are needing to work with.

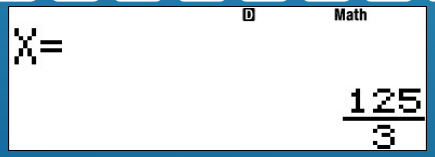


2

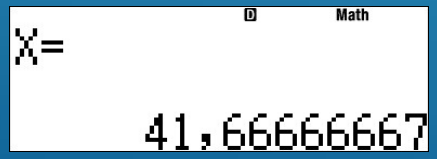
Step 3: Enter in the information given.

1 , 5 = 1 2 , 5 0 = 5 =

Step 4: Press =



Step 5: Convert this into a decimal S⇔D

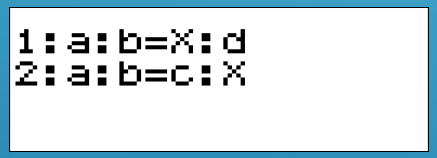


We can use the ratio mode as educators to help us convert marks.

Eg: The following shows a list of Maths marks of a test that was written, it was out of 60. We need to convert the marks to be out of 50.
45, 35, 20, 48, 52, 33, 45, 40, 38, 35, 50, 55, 42, 38, 44.

Let's see how we can do this:

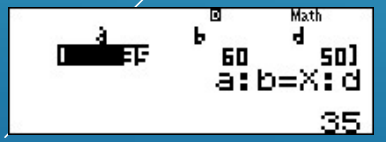
Step 1: Go into ratio mode. MODE ▼ 3
Step 2: Choose which ratio type you are needing to work with.



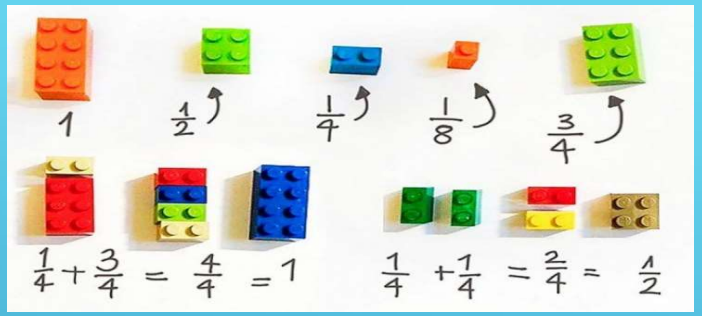
1

Step 3: Enter in the information given.
4 5 = 6 0 = 5 0 =
Step 4: Press = and S⇔D

To return to the first screen and adjust the value just press equals.



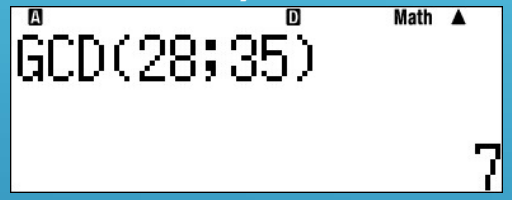
2) LCM & HCF:



On the calculator you will notice that they use GCD (Greatest Common Divisor) this is the same as finding an HCF (Highest Common Factor).

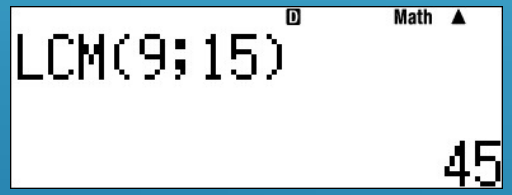
Eg 1: Find the HCF/ GCD of 28 and 35.

ALPHA × 2 8 SHIFT) 3 5) =



Eg 2: Find the LCM of 9 and 15.

ALPHA ÷ 9 SHIFT) 1 5) =



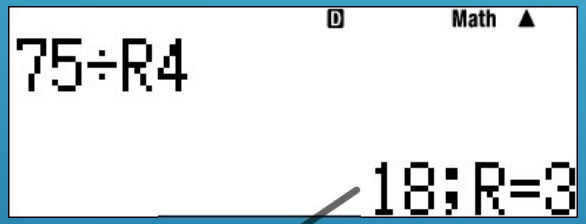
Please note that the HCF and LCM can only be found using 2 numbers.

3) QUOTIENT & REMAINDER:

We are able to get a quotient and remainder of a given question and not just decimals by using this button 

Eg: Calculate the quotient and remainder if 75 is divided by 4.

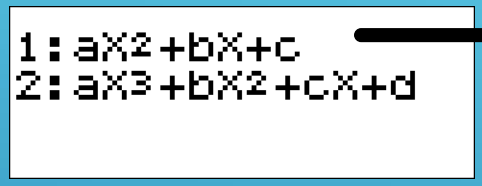
Key Sequence: 7 5 ALPHA ÷R 4 =



Quotient **Remainder**

Now onto the BIG DEAL on the FX 991ZA PLUS II.

4) INEQUALITIES:



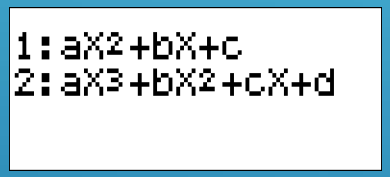
Quadratic Inequalities
Cubic Inequalities

Eg: Consider the following $x^3 - 5x^2 + 6x > 0$

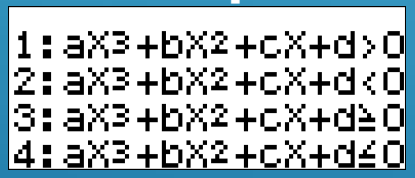
Step 1: MODE ▼

Select 2

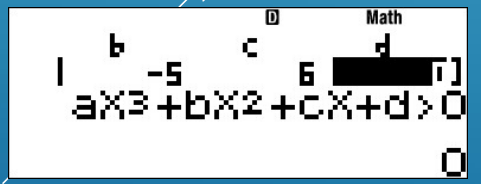
Step 2: Choose option 2 **Cubic Inequalities**



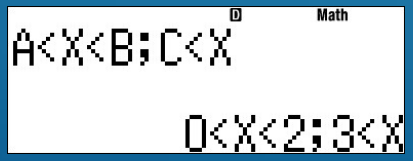
Step 3: Choose option 1



Step 4: Enter in the Co- efficients and constants only.
Press Equals to move along. 1 = − 5 = 6 = 0 =



Step 5: Press =



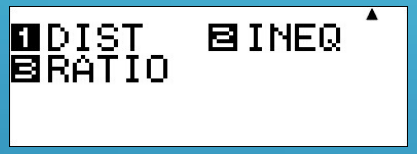
Eg: What if this happens?

$(1-x)(x+2)<0$

Learners may not realise that the critical values are x=1 or x=-2.
Simplify the equation and then use the calculator to get the answers.

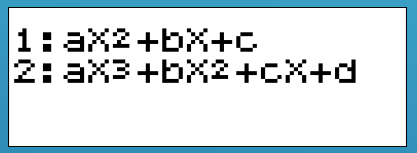
$-x^2-x+2<0$

Step 1: MODE ▼

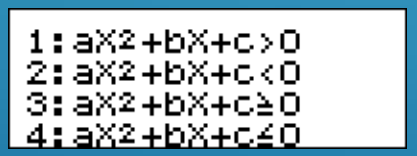


Select 2

Step 2: Choose option 1



Step 3: Choose option 2



Step 4: Enter in the Co- efficients and constants only.
Press Equals to move along. (−) 1 = (−) 1 = 2 =

Step 5: Press =

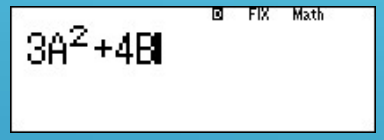
Let's look at some useful existing features on the FX 991 ZA PLUS II:

USING THE CALC FUNCTION:

The CALC function can be used for direct substitution/ finding the value of expressions.

Eg 1: Calculate the following: $3A^2+4B$, if A=6 and B=2.

Step 1: Enter the expression given [3] [ALPHA] [(−)] [x^2] [+] [4] [ALPHA] [,,,]



Step 2: Press the [CALC] **button**

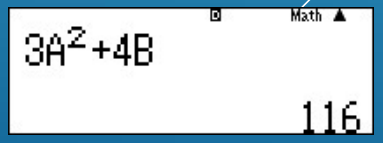
The calculator asks for the value of A?

Step 3: Enter the value for A and Press Equals [6] [=]

The calculator asks for the value of B?

Step 4: Enter the value for B and Press Equals [2] [=]

Automatically the calculator does the substitution



USING THE SOLVE FUNCTION:

Let's start with the basics

Reminder: 

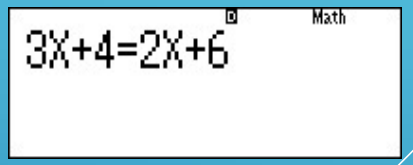
This is the button we use for Solve & when we find equals in an equation

Solve is in gold so we use 

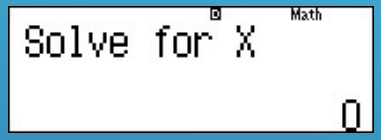
and equals is in red so we use 

Solve the following: $3x + 4 = 2x + 6$

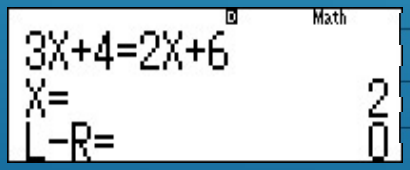
Step 1: Enter the equation given [3] [ALPHA] [)] [+] [4] [ALPHA] [CALC] [2] [ALPHA] [)] [+] [6]



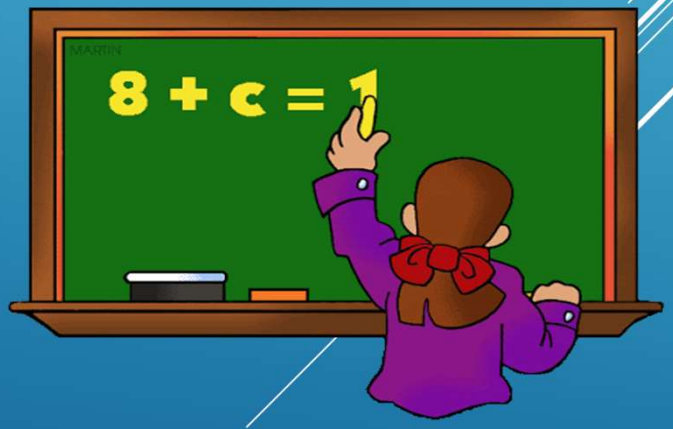
Step 2: To Solve this Press [SHIFT] [CALC]



Step 3: Press [=]



- **The original Equation**
- **The Solution**
- **Left – Right = Zero (Check)**

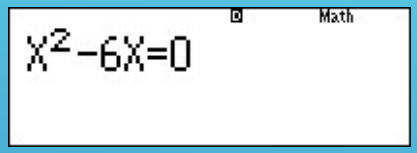


Let's try something different:

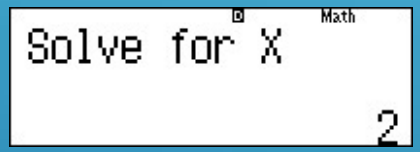
Solve the following $x^2 - 6x = 0$

Follow the same steps as previously

Step 1: Enter the Equation [ALPHA] [)] [x^2] [−] [6] [ALPHA] [)] [ALPHA] [CALC] [0]

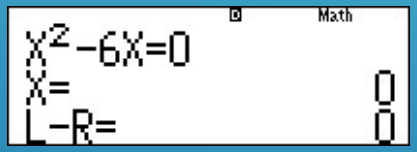


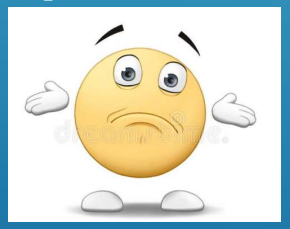
Step 2: Press [SHIFT] [CALC]



This means the calculator will search for a root closest to this value.

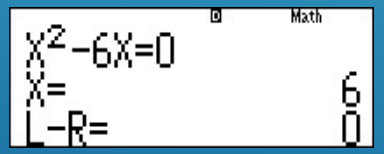
Step 3: Press [=]





There should be 2 roots for this question.

Step 4: Change the Solve for X value and Press [=]

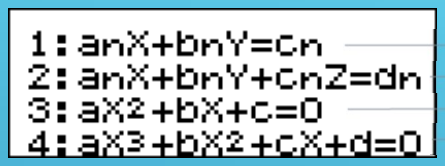


TRY EQN MODE for an easier solution – see next side

EQUATIONS MODE:

MODE

5

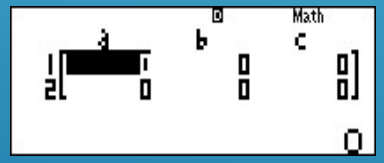


1. Simultaneous Linear with 2 unknown
2. Simultaneous Linear with 3 unknown
3. Quadratic Equation
4. Cubic Equation

Eg 1: Simultaneous Linear with 2 unknowns

Calculate the following $2x - 3y = 3$ **and** $4x - 2y = 10$

Select Option 1



Ensure the equations are in the format ax+by=c
Enter only the co- efficients and constants

2 = − 3 = 3 = 4 = − 2 = 1 0 =

Press =

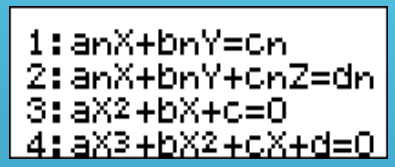
Press =

Therefore X=3 and Y=1

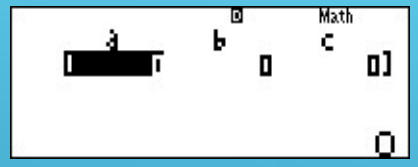
Eg 2: Quadratic Equations

Given the parabola $f(x) = x^2 + 8x + 12$ Find the x- intercepts and the turning point.

MODE 5

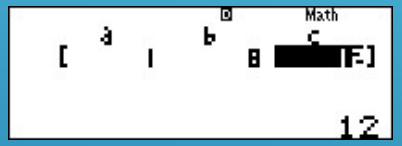


Select Option 3



Enter in the co- efficients and constants only. Remember to check the equation is correct.

1 = 8 = 1 2 =



Press =

Press =

Press =

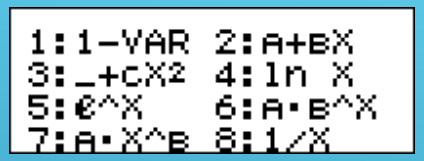
Press =

Therefore x=-2 and x=-6 and the turning point is (-4; -4)

Use Option 3 to Solve Quadratic Equations and to assist with Factorising too.

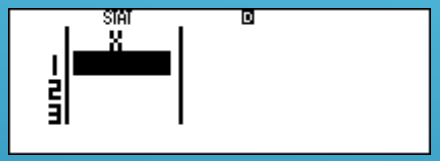
STATISTICS (DATA HANDLING):

MODE 3



We will focus on Option 1: Single Variable Data Handling.

Press 1



Eg 1: The following table shows the number of aircraft that land at King Shaka International Airport from April 2017 to March 2019. Use the information given and list the 5 Number Summary.

2 182	2 323	2 267	2 334	2 346	2 175
2 293	2 263	2 215	2 271	2 018	2 254

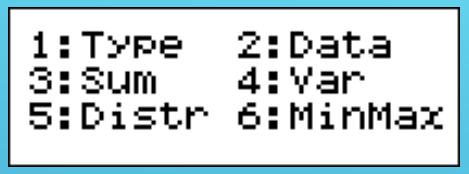
Enter the data into the calculator:

2 1 8 2 = 2 3 2 3 = 2 2 6 7 = 2 3 3 4 = 2 3 4 6 = 2 1 7 5 =

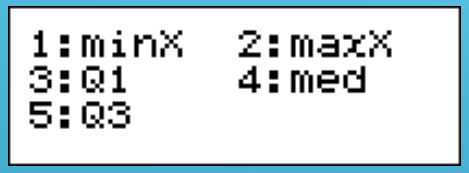
2 2 9 3 = 2 2 6 3 = 2 2 1 5 = 2 2 7 1 = 2 0 1 8 = 2 2 5 4 =

Check the data is correct then Press AC SHIFT 1

A stats menu comes up



Select Option [6]

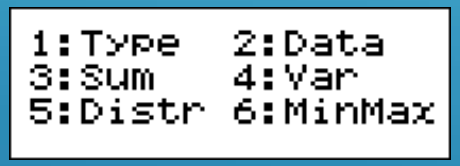


This is your 5 Number Summary

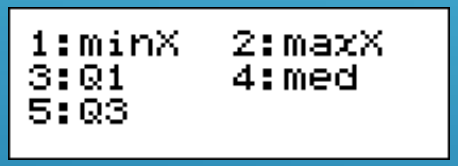
Select Option [1] for the minimum/ lowest value

Press [=]

[AC] [SHIFT] [1]



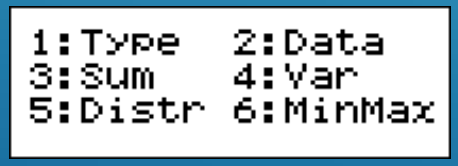
[6]



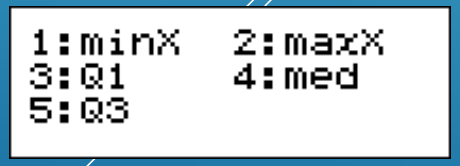
Select Option [3] for the Q1

Press [=]

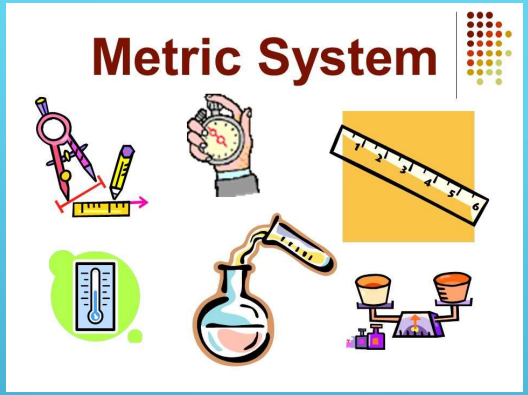
Continue with the same sequence [AC] [SHIFT] [1]



[6]



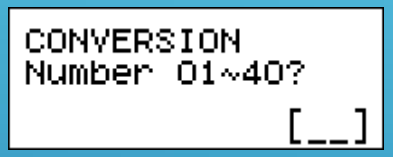
UNIT CONVERSIONS:



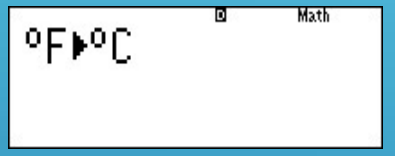
Look at the inside of the lid of the calculator for Unit Conversions.

Eg 1: A cake must be baked at 356°F. Determine to what degrees Celsius the oven should be turned on.

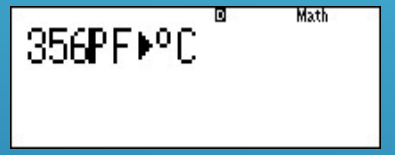
Step 1: Press SHIFT 8



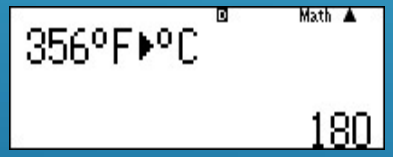
Step 2: Using the inside cover to assist you Select 3 7



Step 3: Use the arrows to navigate to °F and enter ◀ 3 5 6



Step 4: Press =



Eg 2: I am travelling at 120km/h. How many m/s is this?

SHIFT 8 1 9 ◀ 1 2 0 = S⇔D

The EMULATOR for the FX 82ZA PLUS II and the FX 991ZA PLUS II are available for download and available for free till 31/08/2021.

Use the following link.
https://edu.casio.com/softwarelicense/aid/manager/en/

fx-ES PLUS Emulator Subscription v5.00.0010 for Windows®

Select the model

Software download — Download

Cost-free period extension patch download — Download

Select Model FX- 82ZA PLUS II and FX- 991ZA PLUS II.

You will need to download the software and the cost free period extension patch.

What do we offer?

Have a look on our WEBSITE for free Educational CASIO Calculator Resources:
https://www.casio.jamesralphedu.co.za/

How can you get hold of me?

- **KZN : Lauren Izaaks**
  laureni@jamesralph.com

If you have a few spare minutes please will you click on the link below and complete a short survey.

This is used to compile our teacher and school database, as well as gather information about calculators being used in the classrooms.

https://eduentry.casio-intl.com/ccavisca/CC_TakeSurvey?id=a0I7F00000LDQthUAH&cId=none&caId=none&lId=none