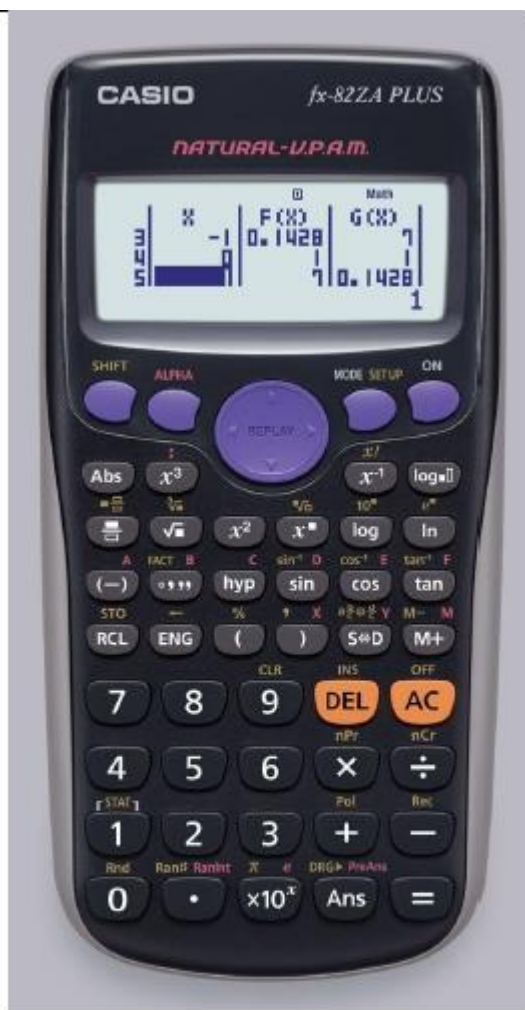# CASIO®

Fx-82ZA PLUS

Grade 7 & 8 Worksheet

[SHIFT] [SETUP]

1. **MthIO(Maths Input / Output format)**
2. LineIO(Linear Input / Output format)
3. **Deg (Degrees – angle unit)**
4. Rad (Radians – angle unit)
5. Gra (Gradians – angle unit)
6. Fix (number of Decimal places)
7. Sci (number of Significant digits)
8. **Norm (Exponential display range)**

1. ab/c (Mixed fraction format)
2. **d/c (Improper fraction format)**
3. STAT (Frequency column on / **off**)
4. TABLE (f(*x*) / **f(*x*) and g(*x*)**)
5. Disp (Decimal Point: **Dot** / Comma)
6. Auto Power Off (**10min** / 60min)
7. CONT (Adjusts display contrast)

Before we start we are going to clear and set up the calculator

1) Resetting/ Clearing	2) Normal Mode
SHIFT 9	SHIFT MODE
``` Clear? 1:Setup 2:Memory 3:All ```	``` 1:MthIO 2:LineIO 3:Deg 4:Rad 5:Gra 6:Fix 7:Sci 8:Norm ```
3	8
``` Reset All? [=] :Yes [AC] :Cancel ```	``` Norm 1~2? ```
=	2
``` Reset All Press [AC] key ```	We select Option 2 so that our answers appear in a decimal format and not scientific notation.
AC	

Rounding Off:

We are able to 'fix' numbers to a selected decimal places.

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

SHIFT MODE

```
1:MthIO 2:LineIO
3:Deg 4:Rad
5:Gra 6:Fix
7:Sci 8:Norm
```

Choose Option 6: Fix

```
Fix 0~9?
```

Select 2 (2 decimal places)

Press S⇔D

Note the word FIX on the top of your screen.

Your answer will now be rounded off to a selected decimal place.

BUT This must be undone, as it does not automatically go away.

For this we go back to Norm Mode 2.

MODE 1: Computational Mode

BODMAS: Brackets ⊟ ⊡ Division ⊟ Multiplication ⊠ Addition ⊞
Subtraction ⊟

This is a Natural Textbook Display Calculator: Input what you see in the order it is written.

Eg 1: ⊟ ⑦ ⊠ ⑨ ⊟ ⊟ ⑧ ⊟ _____

Remember to use brackets where needed. Let's see why.

Eg2: (-2+4)x5=_____ or -2+4x5= _____

Common Fractions & Decimals:

Use the replay button to scroll between the numerator and the denominator.

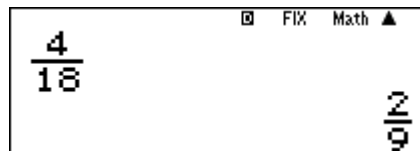How do I input a fraction?

Press the fraction key   ⊟

Note the Natural Textbook display on the calculator. As you would see it in a textbook so it appears on the calculator.

Simplify Fractions:

Eg1: Simplify the following $\frac{4}{18} =$

⊟ ④ � ① ⑧ ⊟ ⟶ $\frac{4}{18}$ $\frac{2}{9}$
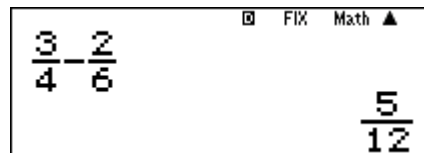
(display: FIX Math ▲)

Adding/ Subtracting Fractions:

Eg1: $\dfrac{3}{4} - \dfrac{2}{6} =$

What do we notice in this question? The denominators are different.

The rule we always follow, what you see in your textbook is what you put into the calculator.

⊟ ③ ▼ ④ ▶ ⊟ ⊟ ② ▼ ⑥ ⊜

$$\begin{array}{c} \square \quad \text{FIX} \quad \text{Math} \; \blacktriangle \\ \dfrac{3}{4} - \dfrac{2}{6} \\ \\ \dfrac{5}{12} \end{array}$$
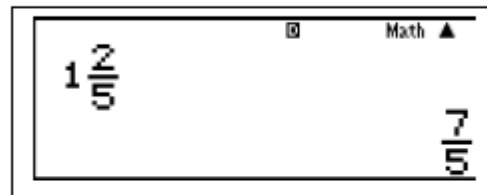
The common denominator is calculated for you and your answer will always be in the simplest format.

Mixed Fractions & Improper Fractions:
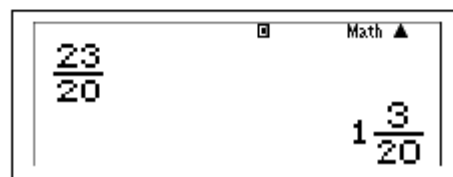
To input a mixed fraction [SHIFT] [▤]

Eg1: Convert $1\dfrac{2}{5}$ into an improper fraction.
Press [SHIFT] [▤]
Enter in the data ① ▶ ② ▼ ⑤
Press Equals ⊜

$$\begin{array}{c} \square \qquad\qquad \text{Math} \; \blacktriangle \\ 1\dfrac{2}{5} \\ \\ \dfrac{7}{5} \end{array}$$

Eg2: Convert from an improper fraction to a mixed fraction
Convert $\dfrac{23}{20}$ into a Mixed Number. _____
Press the fraction key [▤]
Input the data ② ③ ▼ ② ⓪
Press Equals ⊜
Press [SHIFT] [S↔D]

$$\begin{array}{c} \square \qquad\qquad \text{Math} \; \blacktriangle \\ \dfrac{23}{20} \\ \\ 1\dfrac{3}{20} \end{array}$$

Decimals:

Convert from a fraction into a decimal

Eg1: $\dfrac{1}{2}$
Press [▤]
Press equals ⊜
Press [S↔D]

$$\begin{array}{c} \square \qquad\qquad \text{Math} \; \blacktriangle \\ \dfrac{1}{2} \\ \\ 0.5 \end{array}$$
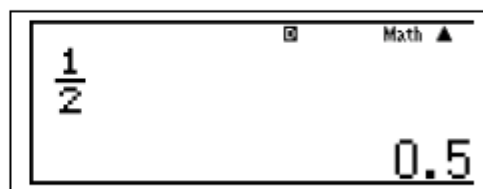
Let's put it altogether and try this:

Improper Fraction	Mixed Fraction	Decimal
$\dfrac{11}{4}$		
	$5\frac{1}{3}$	
		3.14

Exponents & Surds:

Eg1: $3^2 = 9$
   Press $\boxed{x^2}$
   Enter the base 3
   Press Equals $\boxed{=}$

Eg2: $10^5 =$ _____
   Press $\boxed{x^\blacksquare}$
   Enter the Base and the exponent
   Press Equals $\boxed{=}$

Eg3: $\sqrt{64}$
   Press $\boxed{\sqrt{\blacksquare}}$
   Enter the number $\boxed{6}$ $\boxed{4}$
   Press Equals $\boxed{=}$

Eg4: $\sqrt[3]{125}$
   Press $\boxed{\text{SHIFT}}$ $\boxed{\sqrt{\blacksquare}}$
   Enter the number $\boxed{1}$ $\boxed{2}$ $\boxed{5}$
   Press Equals $\boxed{=}$

Prime Factors:
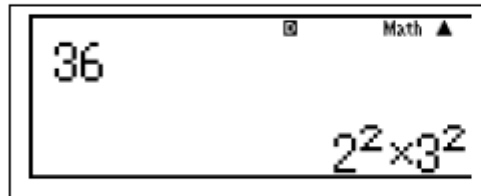
Note that all answers are given in exponential form

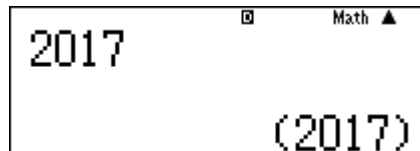Eg1: Calculate the prime factors of 36 _____
Enter the number 36

Press Equals ⌑

Press SHIFT °'''

$$36$$
$$2^2 \times 3^2$$

Math ▲

Eg2: Calculate the prime factors of 2017 _____

What do you notice?

$$2017$$
$$(2017)$$

Math ▲

Why does this happen? 2017 is a prime number ☺

Time:

Remember when dealing with time there are 60 seconds in a minute and 60 minutes in an hour. A calculator doesn't know this unless you tell it. You are able to work out Hours, Minutes and Seconds by using the time key.

Add or Subtract Time:

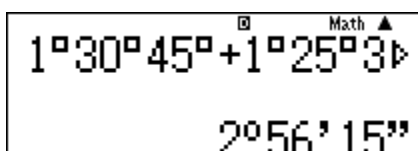Eg1: Add 1hour, 30minutes and 45seconds to 1hour, 25minutes and 30seconds.
What is the total time? _____

Rule 1: Always work in Hours, Minutes and Seconds!
Rule 2: Always remember to push the Time Button after every Hour, Minute and Second!

1 °''' 3 0 °''' 4 5 °''' + 1 °''' 2 5 °''' 3 0 °''' =

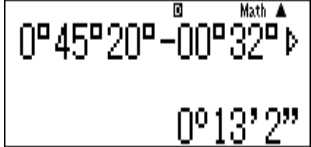$$1°30°45°+1°25°3▸$$
$$2°56'15''$$

Math ▲

Eg2: Jackie runs a 5km race in 45minutes and 20seconds. Zoe runs the same race in 32minutes and 18seconds. How much faster did Zoe run the race?

NB: If there are no Hours, Minutes or Seconds put in a zero!

[0] [°'''] [4] [5] [°'''] [2] [0] [°'''] [−] [0] [°'''] [3] [2] [°'''] [1] [8] [°'''] [=]

0°45°20°−00°32° ▷
0°13'2"

Syntax Error... Now what??

Syntax means a sign or symbol is incorrect.
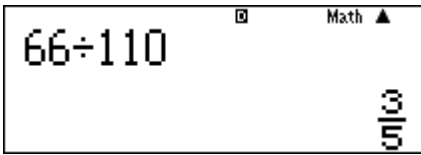
Syntax ERROR
[AC]   :Cancel
[◄][►]:Goto

Use the arrows on the Replay Button- Go to the mistake.

Rate (Speed, Distance and Time):

Eg1: Dylan needs to travel from Durban to Pietermaritzburg, which is 66km apart. If he travels at a constant speed of 110km/h, how long will it take him?
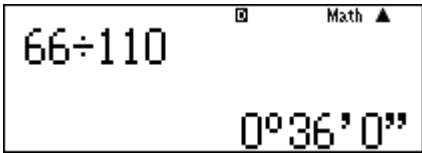
Time=$\dfrac{Dis\tan ce}{speed}$

[6] [6] [÷] [1] [1] [0] [=]

66÷110
$\dfrac{3}{5}$

This is not the final answer as we want it to be expressed as a time.

66÷110
0°36'0"

All we need to do is press [°''']

Therefore it takes Dylan 36 minutes to travel from Durban to Pietermaritzburg.

Always remember to write your answer in the normal format and not as it appears on the calculator!
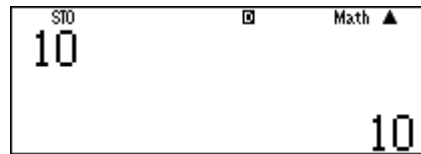
Eg: 36 Minutes and not 0°36'0"

Storing Information & Substitution:

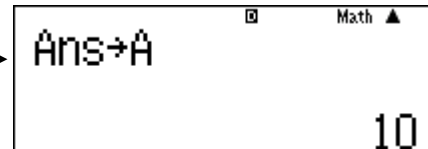Eg1: If A= 10 and B= 5. Calculate the value of A+B.

   Enter the Value 10

   Press [=]

   Press [SHIFT] [RCL] ——→

   | STO   □   Math ▲ |
   | 10 |
   | 10 |

   We now have to select where you want to store the value.

   Store it in A. For this we press [(−)] ——→

   | □   Math ▲ |
   | Ans→A |
   | 10 |

   This is telling you that your answer is stored and substituted in A.

   Do the same for B
   Enter the value 5

   Press [=]

   Press [SHIFT] [RCL]

   We now have to select where you want to store the value.

   Store it in B. For this we press [∘,,,] ——→

   | □   Math ▲ |
   | Ans→B |
   | 10 |
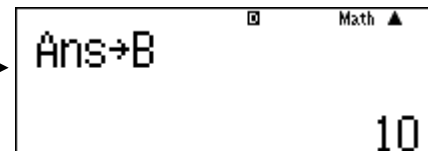
   Note that we will now use the [ALPHA] button.

   Therefore to calculate A+B= we do the following: [ALPHA] [(−)] [+] [ALPHA] [∘,,,] [=]

   | □   Math ▲ |
   | A+B |
   | 20 |
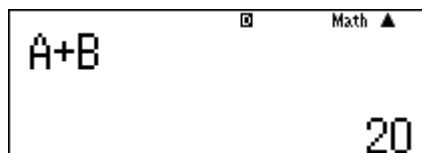
   If you are only wanting to recall or see what value is stored use [STO RCL]

   [RCL] [∘,,,]

   | □   Math ▲ |
   | B |
   | 10 |
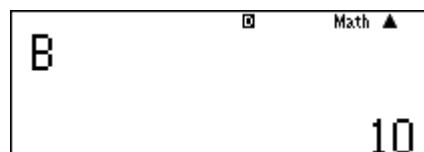
   This will show you what you have stored in B.