Greatest Common Divisor with User Input for the Casio fx-5800P Calculator
https://github.com/slugrustle/fx-5800P_progs Version 1

```
0→DimZ:
27→DimZ:
0→A:
"ENTER -1 AFTER  LAST INPUT":
While 1:
   "NUMBER"?→B:
   B=-1⇒Break:
   If B≠Int(B):
      Then Cls:
      "NUMBER MUST BE  AN INTEGER":
      Stop:
   IfEnd:
   If B<1 Or B≥1X10 10:
      Then Cls:
      "NUMBER MUST BE  >0 And <1X10 10":
      Stop:
   IfEnd:
   A+1→A:
   If A≤27:
      Then B→Z[A]:
   Else Cls:
      "SUPPORTS AT MOST27 NUMBERS":
      Stop:
   IfEnd:
WhileEnd:
If A<2:
   Then Cls:
   "REQUIRES 2 OR   MORE NUMBERS":
   Stop:
IfEnd:
A→D:
Z[D]→B:
For D−1→A To 1 Step -1:
   Z[A]→C:
   While B≠C:
      If B≥C:
         Then B−C×Int(B÷C)→B:
         B=0⇒C→B:
      Else C−B×Int(C÷B)→C:
         C=0⇒B→C:
      IfEnd:
   WhileEnd:
Next:
1→C:
Int(D÷3)→E:
D−3×E>0⇒E+1→E:
Lbl 1:
Cls:
Locate 1,1,B:
Locate 12,1,C:
Locate 13,1,":":
Locate 14,1,E:
3×(C−1)+1→A:
Locate 1,2,Z[A]:
A+1≤D⇒Locate 1,3,Z[A+1]:
A+2≤D⇒Locate 1,4,Z[A+2]:
While 1:
   Getkey→F:
   If F=34 Or F=73:
      Then Cls:
      "DONE":
      Stop:
   IfEnd:
   If F=77 Or F=84 Or F=86 Or F=47:
      Then C+1→C:
      C>E⇒1→C:
      Goto 1:
   IfEnd:
   If F=67 Or F=83 Or F=85:
      Then C−1→C:
      C<1⇒E→C:
      Goto 1:
   IfEnd:
WhileEnd
```

Program Outline

Lines 1–2: Set up memory for extra variables Z[α] where α∈[1,27].

Lines 3–31: User input of arguments for GCD(Z[1], ..., Z[D]). D∈[2,27].

Lines 32–43: Evaluate B = GCD(Z[1], ..., Z[D]). Uses GCD(β,γ,δ,ε) = GCD(GCD(GCD(β,γ),δ),ε).

Lines 44–74: Display result and inputs.

Variable Descriptions

A: Index into extra variable memory.

B: User input and GCD evaluation.

C: GCD evaluation and number of displayed input argument page.

D: Number of input arguments.

E: Number of input argument display pages (3 inputs per page).

F: Identifier of most recently pressed key.

Notes

Lines 4, 10, 15, 22, and 28: The weird spacing prevents text wrapping from occurring in the middle of a word.

Line 13: The fx-5800P can only represent numbers on the range [−1$\times 10^{10}$,1$\times 10^{10}$] as exact integers.

Line 59: Pressing DEL (34) or EXIT (73) ends the program.

Line 64: Pressing + (77), ▲ (84), ▶ (86), or EXE (47) cycles to the next input argument display page.

Line 69: Pressing − (67), ◀ (83), or ▼ (85) cycles to the previous input argument display page.