

Greatest Common Denominator with User Input for the Casio fx-5800P Calculator

https://github.com/slugrustle/fx-5800P_progs

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1  0→DimZ:
2  27→DimZ:
3  0→A:
4  "ENTER -1 AFTER  LAST INPUT":
5  While 1:
6      "NUMBER"?→B:
7      B=-1⇒Break:
8      If B≠Int(B):
9          Then Cls:
10             "NUMBER MUST BE  AN INTEGER":
11             Stop:
12         IfEnd:
13         If B<1 Or B≥1×1010:
14             Then Cls:
15                 "NUMBER MUST BE  >0 And <1×1010":
16                 Stop:
17             IfEnd:
18             A+1→A:
19             If A≤27:
20                 Then B→Z[A]:
21             Else Cls:
22                 "SUPPORTS AT MOST27 NUMBERS":
23                 Stop:
24             IfEnd:
25         WhileEnd:
26         If A<2:
27             Then Cls:
28             "REQUIRES 2 OR  MORE NUMBERS":
29             Stop:
30         IfEnd:
31         A→D:
32         Z[D]→B:
33         For D-1→A To 1 Step -1:
34             Z[A]→C:
35             While B≠C:
36                 If B≥C:
37                     Then B-C×Int(B÷C)→B:
38                     B=0⇒C→B:
39                 Else C-B×Int(C÷B)→C:
40                     C=0⇒B→C:
41                 IfEnd:
42             WhileEnd:
43         Next:
44         1→C:
45         Int(D÷3)→E:
46         D-3×E>0⇒E+1→E:
47         Lbl 1:
48         Cls:
49         Locate 1,1,B:
50         Locate 12,1,C:

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51  Locate 13,1,"":
52  Locate 14,1,E:
53  3×(C-1)+1→A:
54  Locate 1,2,Z[A]:
55  A+1≤D⇒Locate 1,3,Z[A+1]:
56  A+2≤D⇒Locate 1,4,Z[A+2]:
57  While 1:
58      Getkey→F:
59      If F=34 Or F=73:
60          Then Cls:
61              "DONE":
62              Stop:
63          IfEnd:
64          If F=77 Or F=84 Or F=86 Or F=47:
65              Then C+1→C:
66              C>E⇒1→C:
67              Goto 1:
68          IfEnd:
69          If F=67 Or F=83 Or F=85:
70              Then C-1→C:
71              C<1⇒E→C:
72              Goto 1:
73          IfEnd:
74      WhileEnd

```

Lines 1–2: Set up memory for extra variables $Z[\alpha]$ where $\alpha \in [1, 27]$.

Lines 3–31: User input of arguments for $\text{GCD}(Z[1], \dots, Z[D])$. $D \in [2, 27]$.

Lines 32–43: Evaluate $B = \text{GCD}(Z[1], \dots, Z[D])$. Thanks Euclid.

Lines 44–74: Display result and inputs.

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.

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