

Least Common Multiple 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≥1x1010:
14             Then Cls:
15                 "NUMBER MUST BE  >0 And <1x1010":
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                 B→E:
35                 Z[A]→C:
36                 While B≠C:
37                     If B≥C:
38                         Then B-C×Int(B÷C)→B:
39                         B=0⇒C→B:
40                     Else C-B×Int(C÷B)→C:
41                         C=0⇒B→C:
42                     IfEnd:
43                 WhileEnd:
44                 If E≥Z[I]:
45                     Then (E÷B)×Z[I]→B:
46                 Else (Z[I]÷B)×E→B:
47                 IfEnd:
48                 If B≥1x1010:

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49             Then Cls:
50                 "OVERFLOW":
51                 Stop:
52             IfEnd:
53         Next:
54         Int(D÷3)→E:
55         D-3×E>0⇒E+1→E:
56         1→A:
57         Lbl 1:
58         Cls:
59         Locate 1,1,B:
60         Locate 12,1,C:
61         Locate 13,1,"":
62         Locate 14,1,E:
63         3×(C-1)+1→A:
64         Locate 1,2,Z[A]:
65         A+1≤D⇒Locate 1,3,Z[A+1]:
66         A+2≤D⇒Locate 1,4,Z[A+2]:
67         While 1:
68             Getkey→F:
69             If F=34 Or F=73:
70                 Then Cls:
71                     "DONE":
72                     Stop:
73             IfEnd:
74             If F=84 Or F=86 Or F=77 Or F=47:
75                 Then C+1→C:
76                 C>E⇒1→C:
77                 Goto 1:
78             IfEnd:
79             If F=83 Or F=85 Or F=67:
80                 Then C-1→C:
81                 C<1⇒E→C:
82                 Goto 1:
83             IfEnd:
84         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 $\text{LCM}(Z[1], \dots, Z[D])$. $D \in [2, 27]$.

Lines 32–53: Evaluate $B = \text{LCM}(Z[1], \dots, Z[D])$. Uses $\text{LCM}(\beta, \gamma) = (\beta \times \gamma) \div \text{GCD}(\beta, \gamma) = (\beta \div \text{GCD}(\beta, \gamma)) \times \gamma = (\gamma \div \text{GCD}(\beta, \gamma)) \times \beta$

Lines 54–84: Display result and inputs.

A: Index into extra variable memory.

B: User input and LCM evaluation.

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

D: Number of input arguments.

E: LCM evaluation and number of input argument display pages (3 inputs per page).

F: Identifier of most recently pressed key.

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