

# Least Common Multiple with User Input for the Casio fx-5800P Calculator

[https://github.com/slugrustle/fx-5800P\\_progs](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[A]:
45                 Then (E÷B)×Z[A]→B:
46             Else (Z[A]÷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→C:
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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