

Sum of cubes of the digits

This program will determine whether there any three digit numbers whose sum of the cubes of the digits in that number is equal to the number itself. In other words, is there a number abc such that $a^3 + b^3 + c^3 = abc$.

Example:

Starting value=350

Ending value=450

370

$$3^3 + 7^3 + 0^3$$

$$27 + 343 + 0 = 370$$

371

$$3^3 + 7^3 + 1^3$$

$$27 + 343 + 1 = 371$$

407

$$4^3 + 0^3 + 7^3$$

$$64 + 0 + 343 = 407$$

1. Key in 350, press B
2. Key in 450, press R/S
3. 1st display=370, press R/S
4. 2nd display=371, press R/S
5. 3rd display=407, press R/S
6. 4th display=0, done.

Three numbers satisfy the criteria, 370, 371, and 407.

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017 f LBL B 31 25 12
018 DSP 0 23 00
019 STO 0 33 00
020 R/S 84
021 STO 3 33 03
022 f LBL 1 31 25 01
023 RCL 0 34 00
024 STO 1 33 01
025 CLX 44
026 STO 2 33 02
027 f LBL 2 31 25 02
028 RCL 1 34 01
029 RCL 1 34 01
030 1 01
031 0 00
032 ÷ 81
033 f INT 31 83
034 STO 1 33 01
035 1 01
036 0 00
037 x 71
038 - 51
    
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039 ENTER 41
040 g x2 32 54
041 x 71
042 STO+2 33 61 02
043 RCL 1 34 01
044 f X<0? 31 61
045 GTO 2 22 02
046 RCL 0 34 00
047 RCL 2 34 02
048 g X=Y? 32 51
049 R/S 84
050 1 01
051 STO+0 33 61 00
052 RCL 3 34 03
053 RCL 0 34 00
054 g X≠Y? 32 71
055 GTO 1 22 01
056 CLX 44
057 R/S 84
058 GTO B 22 12
    
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