Assignment 2
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O-5

Question-1: Write a SimpleRisc assembly program to find the Ramanujan number, the smallest number that is a sum of two cubes in two different ways.

Answer/Code:

```
mov cnt 0
mov i 1

.loop:
      mov j i
      mov k i
      .loop1:
            .loop2:
                  mul r1 j j
                  mul r2 r1 j
                  mul r3 k k
                  mul r4 r3 k
                  mov r5 0
                  add r5 r2 r4
                  cmp r5 i
                  beq .countIncrease
                  sub k k 1
                  cmp k 0
                  bgt .loop2

            sub j j 0
            bgt .loop1

      cmp cnt 2
      bgt .exit
      add i i 1
      .cntIncrease:
            add cnt cnt 1
      .exit:
            exit
      mov cnt 0
```