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

note: r0 will store the ramanujan number

```
mov r0 1
```

```
mov r1 0
```

```
mov r2 -1
```

```
mov r6 0
```

```
. loopA
```

```
    add r0 r0 1
```

```
    mov r6 0
```

```
    mov r1 0
```

```
    mov r2 -1
```

```
    b. loopB
```

```
. loopB
```

```
    add r1 r1 1
```

```
mov r3 r1
mul r3 r3 r3
mul r3 r3 r1
cmp r3 r0
bgt .loopA
mov r2 -1
b .loopC
```

```
.loopC
```

```
add r2 r2 1
mov r4 r2
mul r4 r4 r4
mul r4 r4 r2
add r5 r3 r4
cmp r5 r0
bgt .loopB
beq .increaseCounter
cmp r2 r1
beq .loopB
b .loopC
```

.increaseCounter

add r6 r6 1

cmp r6 2

bgt .exit

beq .exit

b .loopB

.exit