

5. Ramanujan Number is the smallest number that can be expressed as the sum of two cubes in two different ways.
WAP to print all such numbers up to a reasonable limit.

```
#include <stdio.h>
```

```
int main () {
```

```
int limit = 10000;
```

```
printf ("Ramanujan Numbers up to %d:\n", limit);
```

```
for (int a = 1; a*a*a < limit; a++) {
```

```
for (int b = a; a*a*a + b*b*b < limit; b++) {
```

```
int sum1 = a*a*a + b*b*b;
```

```
for (int c = a+1; c*c*c < limit; c++) {
```

```
for (int d = c; c*c*c + d*d*d < limit; d++) {
```

```
int sum2 = c*c*c + d*d*d;
```

```
if (sum1 == sum2 && (a != c || b != d)) {
```

```
printf ("%d = %d^3 + %d^3 = %d^3 + %d^3\n", sum1, a, b, c, d);
```

```
}
```

```
}
```

```
}
```

```
}
```

```
}
```

```
return 0;
```

```
}
```

C exp3ramanujan.c > main()

```
1
2  #include <stdio.h>
3
4  int main() {
5      int limit = 10000;
6
7      printf("Ramanujan Numbers up to %d:\n", limit);
8
9      for (int a = 1; a * a * a < limit; a++) {
10         for (int b = a; a * a * a + b * b * b < limit; b++) {
11             int sum1 = a * a * a + b * b * b;
12
13             for (int c = a + 1; c * c * c < limit; c++) {
14                 for (int d = c; c * c * c + d * d * d < limit; d++) {
15                     int sum2 = c * c * c + d * d * d;
16
17                     if (sum1 == sum2 && (a != c || b != d)) {
18                         printf("%d = %d^3 + %d^3 = %d^3 + %d^3\n", sum1, a, b, c, d);
19                     }
20                 }
21             }
22         }
23     }
24
25     return 0;
26 }
27
```

PROBLEMS

OUTPUT

TERMINAL

DEBUG CONSOLE

PORTS

```
PS C:\Users\abiga\OneDrive\Desktop\Absproj> cd "c:\Users\abiga\OneDrive\Desktop\Absproj\  
-o exp3ramanujan } ; if ($?) { .\exp3ramanujan }  
Ramanujan Numbers up to 10000:  
1729 = 1^3 + 12^3 = 9^3 + 10^3  
4104 = 2^3 + 16^3 = 9^3 + 15^3  
PS C:\Users\abiga\OneDrive\Desktop\Absproj> 
```