Euler Project 62

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Problem Statement

The cube, **41063625** (345^3), can be permuted to produce two other cubes: **56623104** (384^3) and **66430125** (405^3). In fact, **41063625** is the smallest cube which has exactly three permutations of its digits which are also cube.

Find the smallest cube for which exactly five permutations of its digits are cube.

Answer

127,035,954,683

Idea

I first created a method that could check if two numbers are anagrams of each other. I then made a list of every cubed number, after adding a number to a list I check it against all the other cubed numbers in the list and count how many anagrams it had. One I found 4 anagrams for that number I printed the smallest.

Python Code

```
def anagram(n1, n2):
    return sorted(str(n1)) == sorted(str(n2))

cubes = []
i = 1
check = True

while check:
  #if i % 1000 == 0:
    #print(i)
  count = 0
  for num in reversed(cubes):
    if anagram((i**3), num):
      count += 1
      if count > 3 :
        print(num)
  cubes.append( i ** 3)
  i += 1
```