#include <iostream>

#include <string>

#include <algorithm>

using namespace std;

bool Is\_happy(int x)

{

string s = to\_string(x);

if (s.length() < 6)

{

reverse(s.begin(), s.end());

for (int i = s.length(); i < 6; i++)

s += string("0");

reverse(s.begin(), s.end());

}

int k = int(s[0]) + int(s[1]) + int(s[2]);

int k1 = int(s[3]) + int(s[4]) + int(s[5]);

if (k == k1)

return true;

else

return false;

}

int main()

{

int n;

cout << "Input n: ";

cin >> n;

for (int i = 0; i <= n; i++)

if (Is\_happy(i))

cout << "Number " << i << " is happy"<<endl;

return 0;

}