

# Siena College's 33<sup>rd</sup> Annual High School Programming Contest

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### Gold Problem #4: Is it a bird? Is it a plane? No, It's a Superpower

#### Background Information:

A Superpower number, N, with K (base-10) digits is a positive integer such that it is the sum of the K<sup>th</sup> power of each individual digit. For example, the number 407 is a Superpower number because

$$407 = 4^3 + 0^3 + 7^3$$

Your program will be given an inclusive interval [Min, Max]. It will then print the number of Superpower numbers in the interval found, followed by the Superpower numbers themselves, one number per line in increasing order.

#### Programming Problem:

Input: Positive integers Min and Max on one input line, where  $1 \leq \text{Min} \leq \text{Max} \leq 100,000,000$

Output: The number of Superpower numbers in the interval, followed by the Superpower numbers themselves in increasing order, with each number on its own line.

Example 1:    Input:  
              1 4

Output:  
4  
1  
2  
3  
4

Example 2:    Input:  
              405 409

Output:  
1  
407

Example 3:    Input:  
              10 67

Output:  
0