Python Assignment 1
Please define functions as solutions for each question.

Question 1
Given an array of integers, return **indices** of the two numbers such that they add up to a specific target.
You may assume that each input would have ***exactly*** one solution, and you may not use the *same* element twice.
Example:

```
Given nums = [2, 7, 11, 15], target = 9,

Because nums[0] + nums[1] = 2 + 7 = 9,
return [0, 1].
```

Question 2
Given a 32-bit signed integer, reverse digits of an integer.

Example 1:

```
Input: 123
Output: 321
```

Example 2:

```
Input: -123
Output: -321
```

Example 3:

```
Input: 120
Output: 21
```

Note:
Assume we are dealing with an environment which could only store integers within the 32-bit signed integer range: $[-2^{31}, 2^{31} - 1]$. For the purpose of this problem, assume that your function returns 0 when the reversed integer overflows.

Question 3
Roman numerals are represented by seven different symbols: I, V, X, L, C, D and M.

Symbol	Value
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

For example, two is written as II in Roman numeral, just two one's added together. Twelve is written as, XII, which is simply X + II. The number twenty seven is written as XXVII, which is XX + V + II.

Roman numerals are usually written largest to smallest from left to right. However, the numeral for four is not IIII. Instead, the number four is written as IV. Because the one is before the five we subtract it making four. The same principle applies to the number nine, which is written as IX. There are six instances where subtraction is used:

- I can be placed before V (5) and X (10) to make 4 and 9.
- X can be placed before L (50) and C (100) to make 40 and 90.
- C can be placed before D (500) and M (1000) to make 400 and 900.

Given a roman numeral, convert it to an integer. Input is guaranteed to be within the range from 1 to 3999.

Example 1:

```
Input: "III"
Output: 3
```

Example 2:

```
Input: "IV"
Output: 4
```

Example 3:

```
Input: "IX"
Output: 9
```

Example 4:

```
Input: "LVIII"
Output: 58
Explanation: L = 50, V= 5, III = 3.
```

Example 5:

```
Input: "MCMXCIV"
Output: 1994
Explanation: M = 1000, CM = 900, XC = 90 and IV = 4.
```

Question 4

Write a function to find the longest common prefix string amongst an array of strings.
If there is no common prefix, return an empty string `""`.

Example 1:

```
Input: ["flower","flow","flight"]
Output: "fl"
```

Example 2:

```
Input: ["dog","racecar","car"]
Output: ""
Explanation: There is no common prefix among the input strings.
```

Note:
All given inputs are in lowercase letters a-z.