

GP - Complete the Series v1 ()

Geometric progression(GP) is a set in which the ratio of 2 consecutive numbers is same. for eg, 1,2,4,8,16.... In this the ratio of the numbers is 2.

The task here is very simple indeed.

You will be given the 3rd term , 3rd last term and the sum of the series. You need print length of the series & the series.

Input

First line will contain a number indicating the number of test cases.

Each of the following t lines will have 3 number '3term' , '3Lastterm' and 'sum'

3term - is the 3rd term in of the series and

3Lastterm - is the 3rd term in of the series and

sum - is the sum of the series.

Output

For each input of the test case, you need to print 2 lines.

first line should have 1 value- number of terms in the series.

2nd line of the output should print the series numbers separated by single space

Example

Input:

```
1
4 64 511
```

Output:

```
9
1 2 4 8 16 32 64 128 256
```

NOTE -

All the values will be in the range $[0, 2^{64}]$ inclusive

The series will have at least 6 elements.

number of test cases ≤ 100 .

The Ratio in all the cases will be an integer. (Thanks Mitch for pointing this out)

All the numbers will fit in 64 bits(long long in C)