

Problem 5. Repeating Decimals

Recall that when a decimal repeats, we write it with a bar over the repeating digits. For example, $\frac{1}{11}$ is written as $1.\overline{09}$ and $\frac{1}{6}$ is written as $1.\overline{16}$. We call the portion of the decimal under the bar the *repetend*. So, in the previous examples, the repetend for $\frac{1}{11}$ is 09 while the repetend for $\frac{1}{6}$ is 6.

Danny is doing research on repeated decimals, and wants to know what the repetend is for any given rational number. However, calculating these has become very tedious, so he needs your help. He has asked you to write a program to find the repeating portion of a decimal.

Input

The input consists of a number k , with $1 \leq k \leq 1000$, followed by k lines. Each line will contain two integers, n and d , which represent the numerator and denominator of the fraction. These numbers are in the range $[1, 1000]$, that is, they satisfy $1 \leq n, d \leq 1000$.

Output

Write k lines. On each line, write the repeating portion of the decimal form of $\frac{n}{d}$. If the decimal terminates, write "Terminates".

Example

standard input	standard output
4	6
1 6	4
4 9	142857
1 7	Terminates
1 25	