

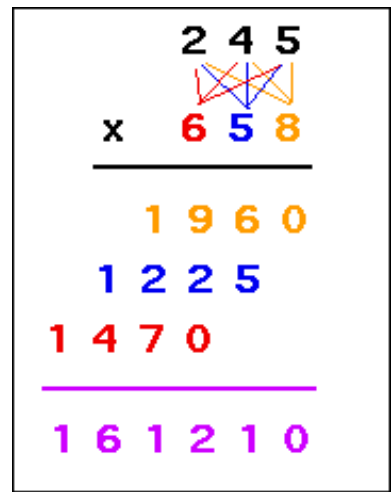
All of us know simple multiplication rule. Can we make a program to multiply two binary numbers? Well we can try.

Input

Each case will define two binary strings (x and y). You can assume that length of each string will not exceed 30. The program will terminate with a '0 0'.

Output

Output must be formatted like the following examples. You have to show the step by step procedure for the multiplication. Each result will be separated by an empty line.



Sample Input

```
11 11
111 10
10 111
0 0
```

Sample Output

```
  11
  11
  --
  11
  11
 ----
1001

  111
  10
  --
  000
 111
 ----
1110

  10
 111
  --
  10
  10
  10
  10
 ----
1110
```