

I	<h2 style="margin: 0;">Minimal Tensile Testing</h2>				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 2px 5px;">Time Limit</td><td style="padding: 2px 5px;">1 second</td></tr> <tr> <td style="padding: 2px 5px;">Memory Limit</td><td style="padding: 2px 5px;">128 MB</td></tr> </table>	Time Limit	1 second	Memory Limit	128 MB
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Quality assurance team of ACMSteel Company wants to reduce material testing cost. Without losing the quality, the best way to achieve this goal is to reduce testing attempts.

For each task, this team will receive identical sample materials and the maximum force that required for testing.

The testing process is simple. Firstly, put a sample material to the force testing machine, then set the testing force with integer scale and start the machine. The result can be either “crack” or “safe”. With the result “safe”, the sample can be repeatedly used for testing purposes. However, if the result is “crack”, it can no longer be used. Every material would “crack” if the force exceeds the certain point (yield point) and it will “safe” from that point and below. This point varies for each material and not predictable.

Your job is to find the least number of trials it would take to guarantee that the company finds the right yield point for each task with maximum **1,000,000** tasks.

INPUT

Each line of the input contains two integer N M ($0 < N < 10$ and $0 < M < 1,000,000$) which denotes the number of sample material and maximum force for each task.

OUTPUT

For each line, output one integer answer the least number of tries it would take to guarantee to find the right yield point for each task.

EXAMPLE

Sample Input	Sample Output
<pre>1 10 2 100</pre>	<pre>10 14</pre>