Anamorphic

Computer Science Society
Programming Contest
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Digital video images are composed of a rectangular grid of *pixels*. For example, a video stored on a DVD might be 720 pixels wide and 480 pixels high (i.e. have *resolution* 720×480), while a video stored on Blu-ray might be 1080 pixels wide and 584 pixels high (i.e. have *resolution* 1080×584). The *aspect ratio* of a digital image is the width in pixels divided by the height in pixels. Although it's not necessarily true in practice, we will assume that individual pixels (in source images and on display devices) are perfectly square and tightly packed, so that a source image viewed on a target device with the same resolution as the image will have a viewed aspect ratio that matches the pixel aspect ratio.

Of course, digital images are often displayed on devices with different resolutions than the source image, sometimes with more or less pixels than the image, sometimes with different pixel aspect ratios than the source image. In this problem, we seek fit the source image on a target display and view it as large as possible, expanding or contracting (i.e. *morphing*) the source pixel dimensions to fit the target display while maintaining the aspect ratio (as closely as possible using whole pixels). Specifically, if the aspect ratio of the source image is greater than or equal to the aspect ratio of the target display, then the pixel width of the source image is morphed to match the pixel width of the target display, and the height of the source image is morphed proportionately (then rounded down to the nearest whole number); otherwise, the pixel height of the source image is morphed to match the pixel height of the target display, and the width of the source image is morphed proportionally (then rounded down to the nearest whole number).

Input Format

Each line of input contains four positive integers w_{in}, h_{in}, w_{dev}, h_{dev} less than or equal to 10^6, separated by one or more blanks, describing the resolution of a source image and a target display.

Output Format

For each line of input, compute the resolution of the displayed image after it is morphed to fit the target display as described above. Output the resulting pixel width and height as shown in the output sample below.

Input Sample

```
1080 584   1440 900
640 480    640 480
320 240    720 405
720 540    720 405
```

Output Sample

```
w x h = 1440 x 778 pixels
w x h = 640 x 480 pixels
w x h = 540 x 405 pixels
w x h = 540 x 405 pixels
```