

Christmas Loops



In the true spirit of Christmas, your homework will involve making boxes - to put presents inside - and diamonds, to give as gifts. It also involves triangles, to brighten your home with Pythagorean joy.

Your task will be to create, in order, a complete box of characters, an empty box, and a triangle. Each shape is described below with the restrictions on each one.

1) Complete box

Scan in a width and a height, and print a box of the corresponding width and height. You may use any character, as long as the dimensions are correct.

Example:

Enter a width for a box: 5

Enter a height for a box: 3

2) Empty box

Scan in a width and a height, and print a box of the corresponding width and height. The outside of the box must be filled in, but the inside must be empty space. You may use any character, as long as the dimensions are correct.

Example:

Enter a width for an empty box: 5

Enter a height for an empty box: 3

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*****
*   *
*****
```

3) Triangle

Scan in a single number, and print a right triangle of the same width and height. This triangle will have the same width and height. You may use any character, as long as the dimensions are correct.

Example:

Enter a dimension for a triangle 4

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*
**
***
****
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EXTRA CREDIT

1) Diamond

Scan in a width. The width must be an odd number - if it is not odd, prompt the user to enter an odd number until one is entered. The first row will be a single character, and will expand outwards by 2 characters at a time until it spans the entire row, then shrinks until it is a single character again.

Example:

Enter a dimension for a diamond: 5

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*
***
*****
***
*
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