Practice problems on loops and nested loops: Write C++ programs to produce the output described in each of the following problems.

(1) A triangle of stars (the user supplies the height):

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(2) Another triangle of stars (the user supplies the height)

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(3) Another triangle of stars (the user supplies the height)

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(4) A double rectangle of stars (the user supplies height and width)

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(5) A table of powers of 2 (user supplies the number)

2 to the power 0 is 1
2 to the power 1 is 2
2 to the power 2 is 4
2 to the power 3 is 8

(6) A table of factorials (user supplies the number)

1! = 1 x 1 = 1  
2! = 2 x 1 x 1 = 2  
3! = 3 x 2 x 1 x 1 = 6  
4! = 4 x 3 x 2 x 1 x 1 = 24  
5! = 5 x 4 x 3 x 2 x 1 x 1 = 120