Hi, I'm Greg. I'm a NYC tutor! I love helping students. I tutor many subjects, assist with homework help, etc. I mainly specialize in specialized tests.

As it turns out, I haven't been able to get to do as many livestreams as I have in past years (yet, hopefully that changes). Therefore, I thought it would be fun to start a Problem Of The Day Series. I will put up a problem and leave it running for a while. You guys will then analyze it, and come up with possible solutions and alternative solutions on your own. I'll eventually post the answer in some manner.

For now we'll play it by ear how that will happen and for how long I'll leave up a problem. But right now I'm thinking of keeping the problem up maybe 2 hours minimum and maybe even in some cases 4 or 5 hours depending upon the dynamics and my situation. Unlike my AMA (Ask Me Anything) lifestream sessions, I will not be checking in every few minutes although I may from time to time join into the discussion. Again, the idea is for you guys to discuss out the problem.

Please be respectful to each other in this endeavor and let's make this fun, educational and forward-thinking. Keep the comments within the spirit of what I'm doing here. Please email me at GregsTutoringNYC@gmail.com if needed.

HERE'S THE PROBLEM: <———
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In order to paint a 1350 m x 790 m ceiling, a rectangular tarp is placed over a moveable elevated stage with a floor size of 135 m by 79 m. The tarp has an overhang past the floor size of 24 cm on each edge. After a mishap, paint got on the sides of the stage and the painters realized that they needed to add an additional 24 cm around the edges of tarp.

How many total cm is the lengths of the additional tarp needed?

HERE'S THE SOLUTION:
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EDIT: THIS ANSWER GOT CUT OFF IN THE ORIGINAL POSTED VERSION OF THIS FILE. AS I WENT TO ADD BACK THE DELETED PARAGRAPH I DECIDED TO REWORD THE ANSWER. THE REVISION FOLLOWS.

As the floor size is 135m x 79m and the overhang is 24cm, then the size of the initial tarp is

(135m + 24cm + 24cm) x (79m + 24cm + 24cm) = 135.48m x 79.48m = 13548cm x 7948cm.

Adding an additional 24cm to each edge around the tarp would yield a modified new tarp size

(13548 + 24 + 24) x (7948 + 24 + 24) = 13596cm x 7996cm

So that perimeter would be 2 x 13596cm added to 2 x 7996cm = 27192 + 15992 = 43184cm

But the problem doesn't ask for the new perimeter after the additional tarp but what the lengths of the additional tarp "border" itself would be.

To do this we need two lengthwise pieces and two width-wide pieces of this border each with their own width of 24cm. Because the border pieces will not overlap either the two length-wise pieces will each have 24+24=48cm added to them but the width-wise pieces won't, or the two width-wise pieces will each have 48cm added to them but the length-wise pieces won't.

This gives us either:

2(13548 + 24 + 24) + 2(7948) = 27192 + 15896 = 43088cm
or
2(13548) + 2(7948 + 24 + 24) = 27096 + 15992 = 43088cm

- Greg / GregsTutoringNYC@gmail.com LLAP ☮