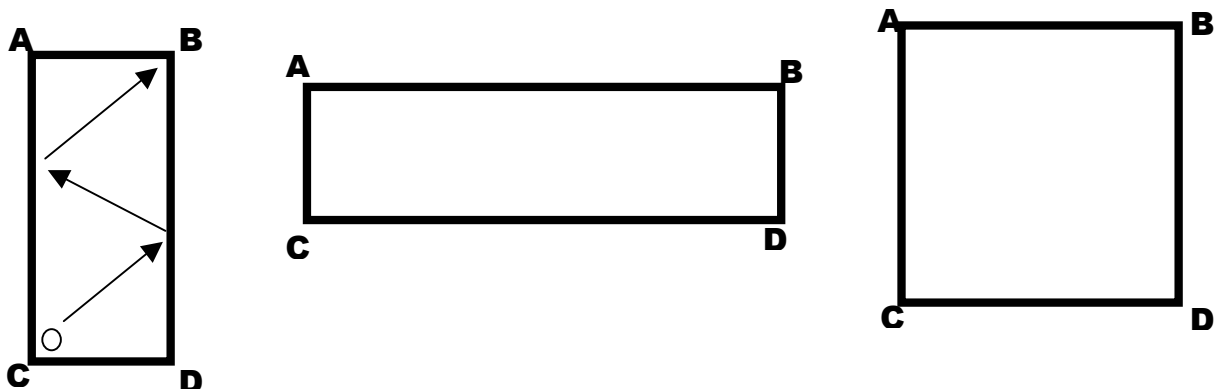


Level D:

Perplexing Paula Pocket is a pool shark. Besides being a great pool player, she makes pool tables. The pool tables are indeed perplexing. They are all different size rectangles with only four pockets. The pockets are at the four corners of the tables.



What makes these tables most interesting is the different games she plays on them. She picks a table and lays the cue ball right in front of pocket C. She challenges her opponent to pick the pocket where the cue ball will drop. Then she always strikes the ball at a 45 degree directions to the sides of the table. The cue banks off different sides of the table until it finally drops in one pocket. If you just guess, you have a 1 in 4 chance of guessing right. But then she also asks you to predict the number of times the ball will bank off a side before dropping in a pocket.

Remember she has almost an unlimited number of tables with different dimensions. Except Paula doesn't like fractions so all her tables have whole number dimensions in feet.

You want to be able to beat Paula at her own game. Determine a strategy that you can use to play with Paula. The strategy would be that when Paula picks a table and gives you the dimensions, you would be able to accurately predict the number of times a cue ball would bank off the wall and exactly which pocket the ball would drop.