# Rotating Systems of Point Masses—Difficult to Rotate[93]

Shown below are six arrangements of 10-point masses. Each of the point masses is the same size and has the same mass. Also shown in each figure is a solid line representing an axis about which the masses are going to be rotated. The point masses exert forces on each other so that they all maintain the arrangements shown while being rotated.

Rank these arrangements, from greatest to least, on the basis of how hard it will be to start the arrangements rotating. That is, put first the arrangement that will be the most difficult to start rotating and put last the easiest arrangement.
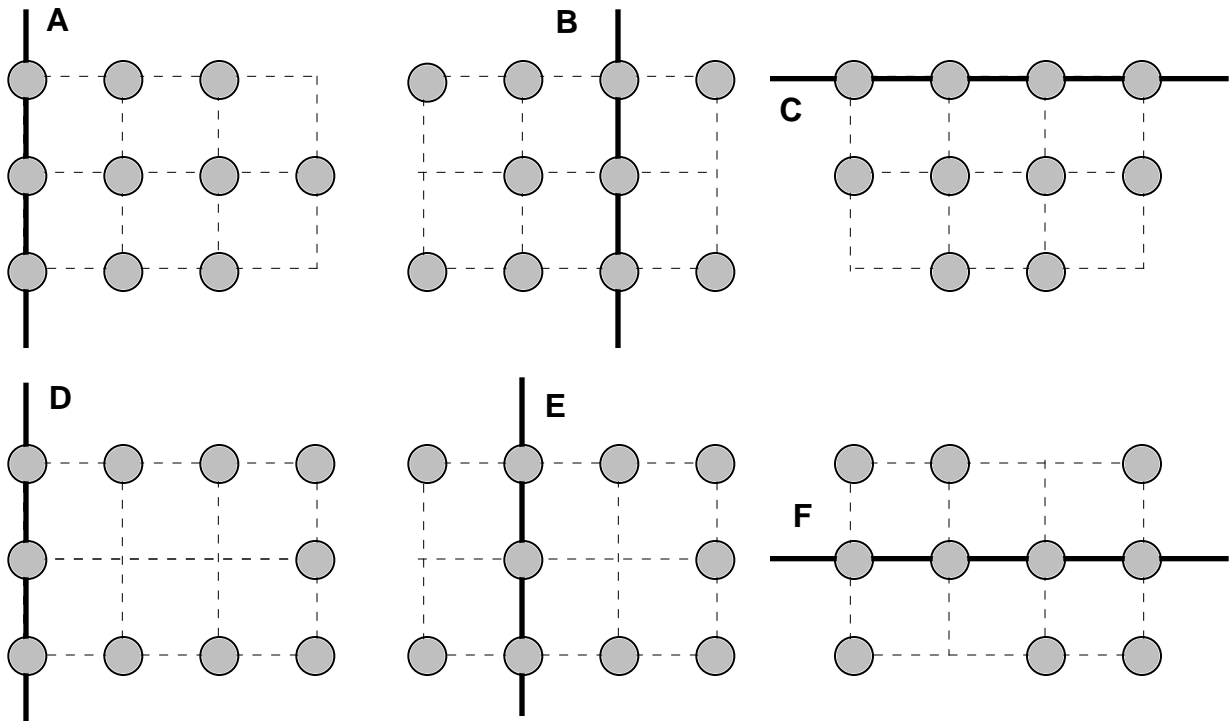
Greatest 1_____ 2_____ 3_____ 4_____ 5_____ 6_____ Least

Or, all of these arrangements will be equally difficult to rotate. _____
Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)
Basically Guessed   Sure   Very Sure
1   2   3   4   5   6   7   8   9   10