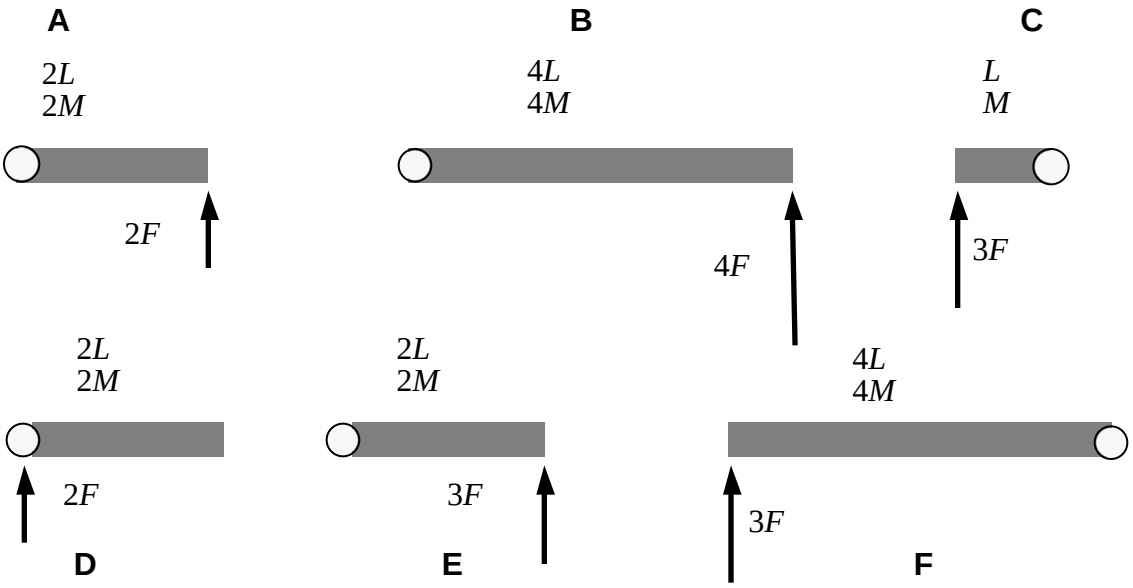
Horizontal Uniform Rods—Angular Acceleration [91]

Shown below in a top view are six uniform rods that vary in mass (M) and length (L). Also shown are circles representing a vertical axis around which the rods are going to be rotated in a horizontal plane and arrows representing forces acting to rotate the rods. The forces change direction in order to always act perpendicular to the rods. Specific values for the lengths and masses of the rods and the magnitudes of the forces are given in each figure.

Rank these rods, from greatest to least, on the basis of the magnitude of their angular acceleration. That is, put first the rod that has the largest angular acceleration and put last the one that will have the smallest angular acceleration.



Greatest 1_____ 2_____ 3_____ 4_____ 5_____ 6_____ Least

Or, all six of these rods will have the same magnitude angular acceleration. _____

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

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