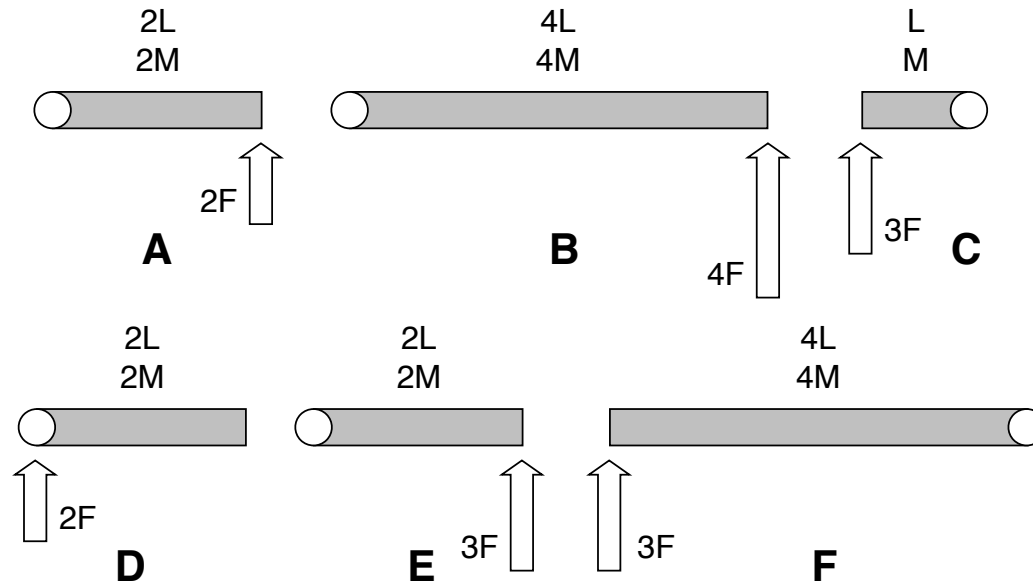


Ranking Task

Horizontal Uniform Rods – Angular Acceleration

Shown below is a top view of 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 the 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 rod that will have the smallest angular acceleration. The moment of inertia for a thin rod rotating about its end is given by $I = 1/3 ML^2$.



Greatest 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____ Least
 Or, all of these rods will have the same magnitude angular acceleration.

Please carefully explain your reasoning.

How sure were you of your ranking? (1 → 10: 1 – basically guessed, 10 – very sure)