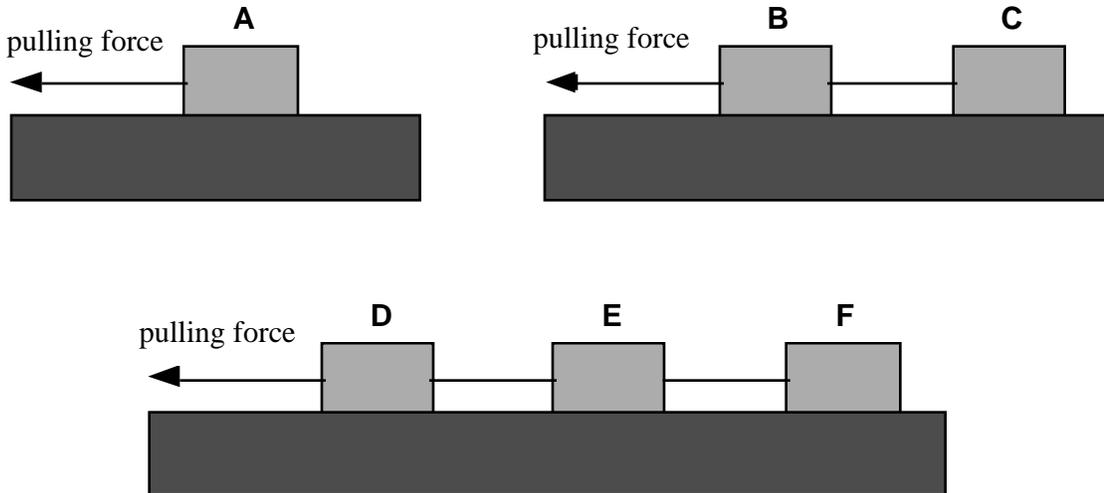


Ropes Pulling Boxes—Acceleration ²⁶

The figures below show boxes that are being pulled by ropes along frictionless surfaces, accelerating toward the left. All of the boxes are identical. The pulling force applied to the left-most rope is the same in each figure. As you can see, some of the boxes are pulled by ropes attached to the box in front of them.

Rank the masses from greatest to least on the basis of the acceleration of the masses.



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

Or, all of the accelerations will be the same (but not zero). _____

Or, the acceleration will be zero for all of these blocks. _____

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

²⁶ S. Loucks