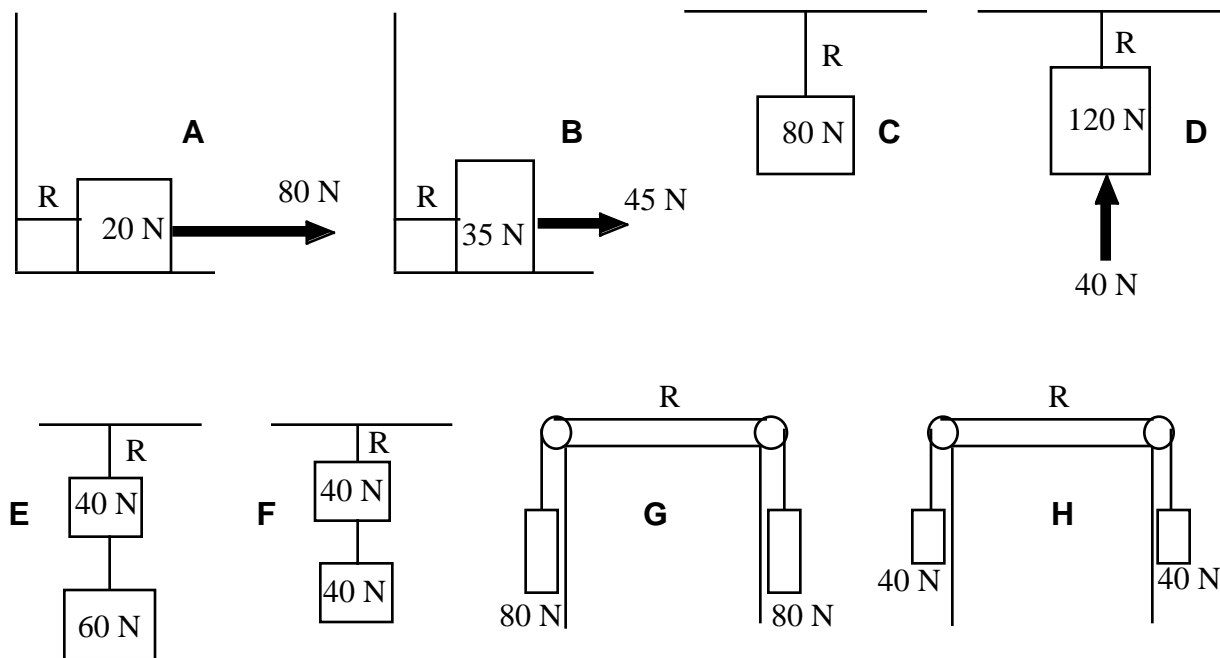


Blocks Attached to Fixed Objects—Rope Tension ²²

The eight figures below show various situations where blocks of different weights are attached by ropes to rigidly fixed objects or to other blocks, which are attached to fixed objects. The situations differ in a number of ways, as the figures show. The weights of the blocks are given in the figures, as well as the magnitudes and directions of any other forces that may be acting. Our interest is solely in the rope that is designated R in each figure.

Rank these arrangements, from greatest to least, on the basis of the tension in the rope R. That is, put first the arrangement where rope R is under the greatest tension and put last the arrangement where rope R is under the least tension.



Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ 8 _____ Least

Or, all the ropes marked R are under the same tension (but not zero). _____

Or, there is no tension in any of these ropes. _____

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

²² D. Maloney