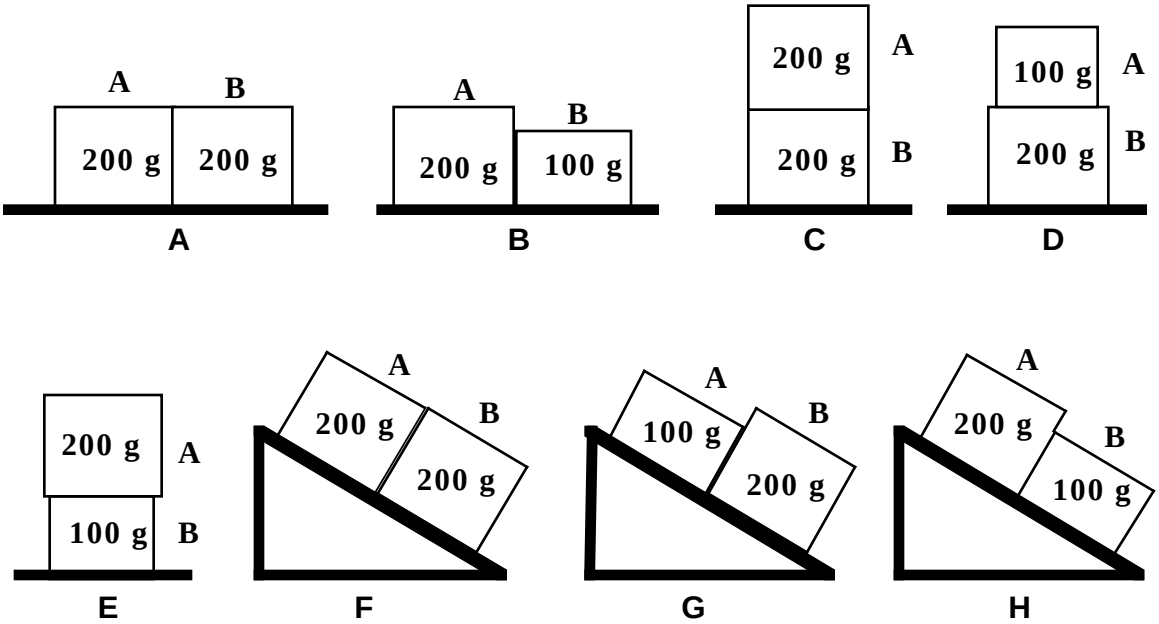
Two Moving Blocks—Force Difference [39]

Shown below are eight arrangements of two wooden blocks both moving left to right at 2 m/s. There are two different mass blocks, either 100 g or 200 g. In all of the arrangements, the blocks are in contact, that is, they are touching each other. As you can see, one of the blocks given in each arrangement is labeled **A**, and the other is labeled **B**. The mass of each block is given in the figures.

Rank these arrangements from largest to smallest on the basis of the difference of the strengths (magnitudes) of the forces between the force **A** exerts on **B** and the force **B** exerts on **A**. In other words, the arrangement where the force **A** exerts on **B** minus the force **B** exerts on **A** is the largest will rank first. In the same way the arrangement where the force **A** exerts on **B** minus the force **B** exerts on **A** is the smallest will rank last. Keep in mind that some of these values might be negative. If **B** is exerting a stronger force on **A** than **A** exerts on **B**, then the difference will be negative. Negative values are smaller than positive values or zero. (A force is a push or a pull.)



Largest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ 8 _____ Smallest

Or, all of these differences will be the same. _____

If you think all of the differences will be the same, what is the approximate value of the difference?

_____

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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