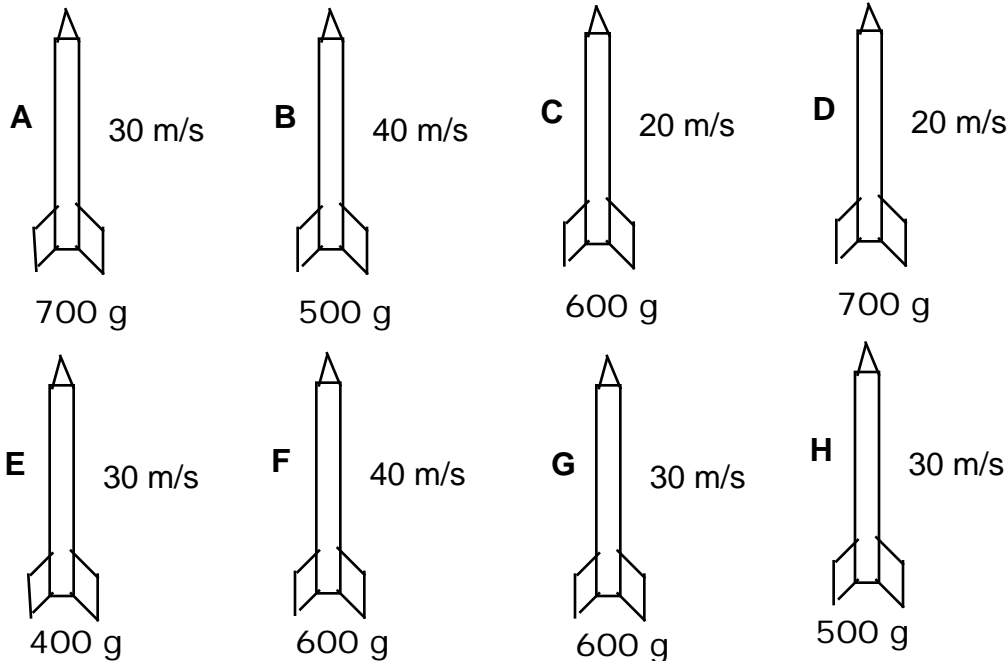


Model Rockets Moving Upward—Net Force ²¹

The eight figures below depict eight model rockets that have just had their engines turned off. All of the rockets are aimed straight up, but their speeds differ. All of the rockets are the same size and shape, but they carry different loads, so their masses differ. The specific mass and speed for each rocket is given in each figure. (In this situation, we are going to ignore any effect air resistance may have on the rockets.) At the instant when the engines are turned off, the rockets are all at the same height.

Rank these model rockets, from greatest to least, on the basis of the net force on them after the engines have turned off.



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

Or, all rockets have the same net force on them (but not zero). _____

Or, the net force on all of these is zero. _____

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

²¹ T. O’Kuma