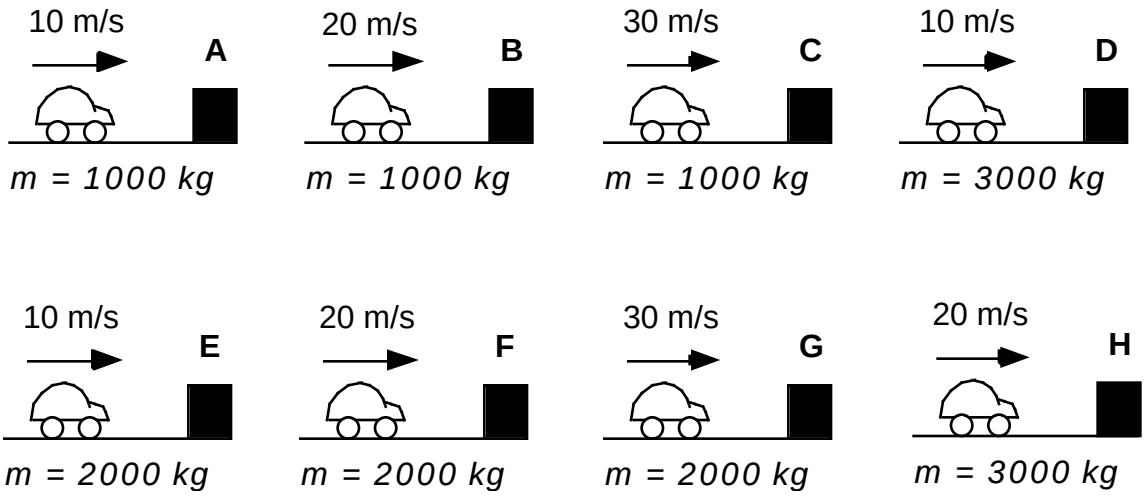
Cars and Barriers—Stopping Time with the Same Force[75]

Shown below are eight cars that are moving along horizontal roads at specified speeds. Also given are the masses of the cars. All of the cars are the same size and shape, but they are carrying loads with different masses. All of these cars are going to be stopped by plowing into identical barriers. All of the cars are going to be stopped by the same constant force by the barrier.

Rank these situations from greatest to least on the basis of the stopping time that will be needed to stop the cars with the same force. That is, put first the car that requires the longest time and put last the car that requires the shortest time to stop the car with the same force.



Longest 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____ 7 ____ 8 ____ Shortest

Or, all cars require the same time._____

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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