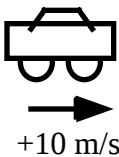
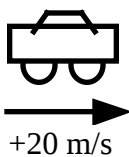
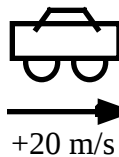
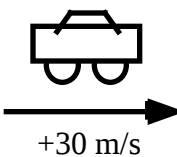
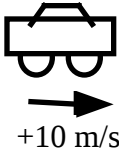
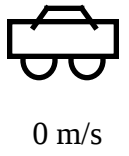
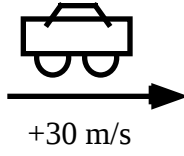
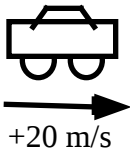
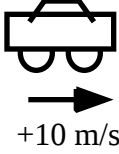
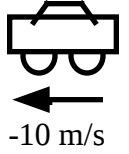
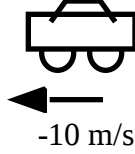
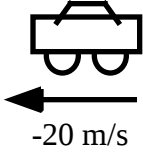
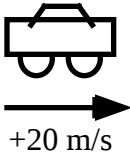
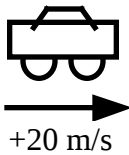
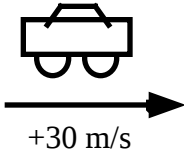
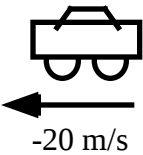


Cars—Impulse During a Change of Velocity ⁸²

The eight situations below show *before* and *after* "snapshots" of a car's velocity. Rank these situations, in terms of impulse on these cars, from most positive to most negative, to create these changes in velocity. All cars have the same mass. Negative numbers, if any, rank lower than positive ones ($-20 \text{ m/s} < -10 \text{ m/s} < 0 < 5$).

	<u>BEFORE</u>	<u>AFTER</u>		<u>BEFORE</u>	<u>AFTER</u>
A			E		
B			F		
C			G		
D			H		

Most Positive

1 2 3 4 5 6 7 8

Most Negative

Or, the impulse on these cars is the same (but not zero) for all of these. _____

Or, the impulse on these cars is zero for all of these._____

Or, it is not possible to determine the impulse on these cars for all of these._____

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	