

NAME _____

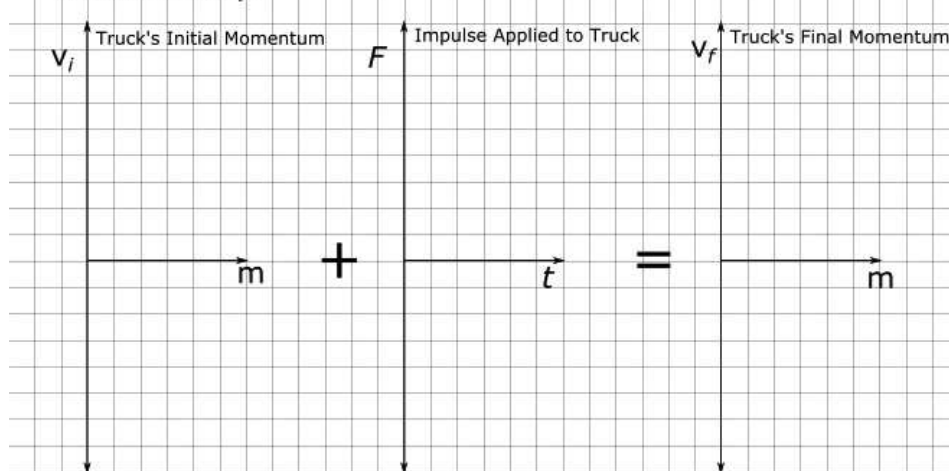
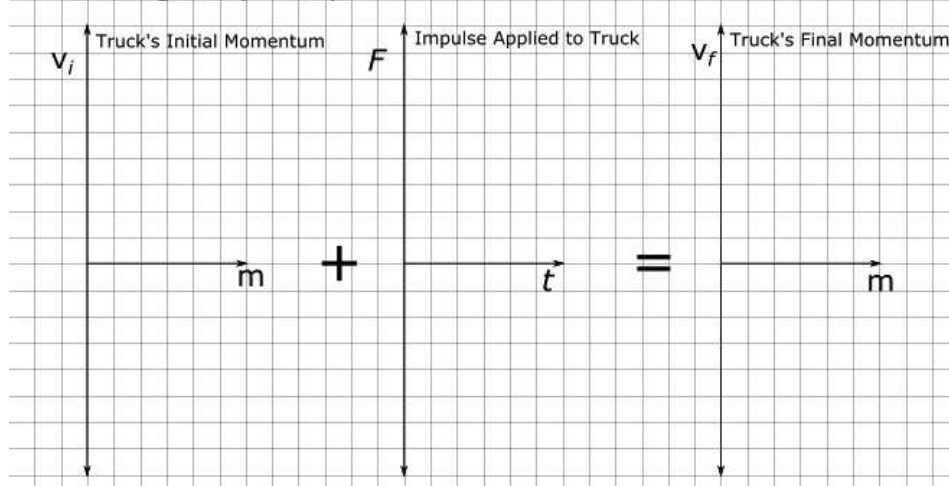
DATE _____

Scenario

A truck has a mass of M and initially moves with a speed of v_0 . Consider two cases: The truck makes a “gentle” stop, and the truck makes an “emergency” stop.

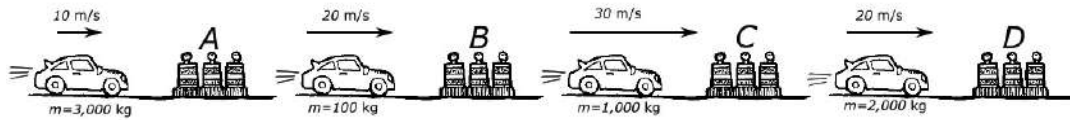
Using Representations

PART A: Show on the diagrams what a “gentle” stop and an “emergency” stop might look like.

Gentle Stop**Emergency Stop**

Argumentation

A car company tests its safety features by crashing cars into barriers in its testing facility. The cars are all the same size and shape but are moving at different speeds and have different masses. Assume that the barriers are all identical and exert the same constant force.



PART B: Rank the time it takes the cars to stop if the barriers apply the same constant force.

Longest time _____ Shortest time _____

Justify your ranking in a few short sentences.
