

Two identical carts sitting on an airtrack are given pushes towards each other. They approach each other, then bounce off elastically. Just after the pushes they are traveling with equal speeds as shown below.



In the movie of the collision, the frame shown below is the one in which the carts are the closest to each other that they get during the collision.



- (a) At the instant of time of this frame, what are the directions of the velocities of the two carts?
- (b) At this instant of time, identify all the forces acting on the left cart. Are any of these forces of the same size so they will cancel?