

86. Although we do not present problems and solutions here, we share a few thoughts on the matter.

- (a) This might be more like part (b) of problem 80, in which energy is “liberated” in the collision, but this depends on what particular sort of pinball collision one has in mind.
- (b) This is a good example of an inelastic (but not completely so) collision and might be similar to part (a) of problem 80.
- (c) This might be similar to problem 85, finding the average force on the car in the hailstorm. Instead of having the hail be halted completely by the collision (as is done with the water in problem 85) there should be some small rebound speed.
- (d) An interesting comparison can be made here between the impact of fist with face with glove, and without the glove. The increase in contact time with the glove certainly decreases the force of impact.
- (e) If baseball is chosen as one’s example, it might be of interest to refer to the article by Howard Brody in the August 1990 issue of the *American Journal of Physics*, where he considers that the bat may be viewed as a relatively free body in the batting process.