1. I have complete reading Chapter 9, “Linear Momenturm and Collisions,” or its equivalent (a) True, (b) false.

2. Car A and car B each collide head-on with a concrete pier supporting a highway overpass. Each is traveling at the same relatively low speed and going in the same direction as they similarly impact the pier. The front end of car A is badly crumpled. Car B is far less crumpled. Neither car has functioning air bags. Occupants of which car are likely to have suffer the more severe injuries? (a) A, (b), B, (c) there is likely little difference.

3. Shortly after a gun is fired (a) the gun and the emerging bullet possess equal kinetic energies, but the gun has greater momentum, (b) the gun and the bullet possess equal kinetic energies, but the bullet has greater momentum, (c) the gun and the bullet possess equal momenta, but the bullet has greater kinetic energy, (d) the gun and the bullet possess equal momenta, but the gun has greater kinetic energy (Note: comparisons of momenta of the bullet and of the gun in this questions are comparisons of magnitudes only. Their momenta are always opposite in direction and sign.)
4. Lois Lane is falling from a tall skyscraper, but Superman, who is aware of her plight, will be able to grab her before she splatters on the sidewalk below. Superman is fast enough that he has the luxury of catching Lois from a flight trajectory of his choice. Which of the possible flight trajectories in the illustration would be most favorable for Lois (represented by the blue dot in the figure)?