

ch. 7 / Conceptual Questions

- ①
- a) The contact time (deceleration time) is short and as a result, a large force of injury acts on the person.
 - b) This decreases the force of injury by ~~is~~ increasing the contact time.
 - c) This is the best option in terms of small force of injury which is the result of a long decelerating time.

② Using $\underbrace{F \Delta t}_{\downarrow} = \Delta p = m \Delta v$

- a) Δp = the same for all of the masses
- b) Δv is largest for the smallest mass.

c) $a = \frac{F}{m}$

Since F = the same, the smaller mass experiences a larger acceleration.

⑥ While in flight, the momentum has two components.

The horizontal component remains unchanged as there is no force acting horizontally. The vertical component will change because of the force of gravity. $\Rightarrow$ The momentum is not conserved.

⑬ The best strategy is to increase the time over which the egg is brought to rest. ~~One~~ One should therefore attempt to catch the egg with a swinging motion.
