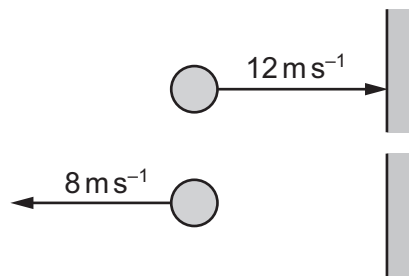


- 7 A cyclist in still air pedals as hard as she can. She reaches a maximum speed. However, after a certain time her maximum speed increases.

What could be a possible cause for this?

- A She cycles into a wind.
  - B She cycles over rougher ground.
  - C She sits more upright on the bicycle.
  - D She starts to travel downhill.
- 8 A ball of mass  $0.5\text{ kg}$  hits a vertical wall at a speed of  $12\text{ m s}^{-1}$ . It bounces back along its original path with a speed of  $8\text{ m s}^{-1}$ . The collision lasts for  $0.10\text{ s}$ .



What is the average force on the ball due to the collision?

- A  $0.2\text{ N}$                       B  $1\text{ N}$                       C  $20\text{ N}$                       D  $100\text{ N}$