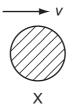
11 The diagram shows two identical spheres X and Y.



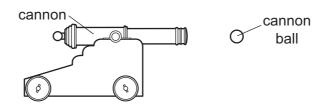


Initially X moves with speed *v* directly towards Y. Y is stationary. The spheres collide elastically.

What happens?

	Х	Υ
Α	moves with speed $\frac{1}{2}v$ to the right	moves with speed $\frac{1}{2}v$ to the right
В	moves with speed v to the left	remains stationary
С	moves with speed $\frac{1}{2}v$ to the left	moves with speed $\frac{1}{2}v$ to the right
D	stops	moves with speed v to the right

12 The diagram shows a cannon ball fired from a cannon.



The mass of the cannon is 1000 kg and the mass of the cannon ball is 10 kg.

The recoil velocity of the cannon is 5 m s⁻¹ horizontally.

What is the horizontal velocity of the cannon ball?

- **A** $200 \,\mathrm{m \, s^{-1}}$
- **B** $500 \,\mathrm{m \, s^{-1}}$
- \mathbf{C} 2000 m s⁻¹
- **D** $5000 \,\mathrm{m \, s^{-1}}$
- 13 Which force is caused by a pressure difference?
 - **A** friction
 - **B** upthrust
 - C viscous force
 - **D** weight