

- 15** A cannon-ball of mass  $3.50\text{ kg}$  is fired at a speed of  $22.0\text{ m s}^{-1}$  from a gun on a ship at a height of  $6.00\text{ m}$  above sea level.

The total energy of the cannon-ball is the sum of the gravitational potential energy relative to the surface of the sea and the kinetic energy.

What is the total energy of the cannon-ball as it leaves the gun?

- A**  $206\text{ J}$                       **B**  $641\text{ J}$                       **C**  $847\text{ J}$                       **D**  $1050\text{ J}$

- 16** An aircraft travels at a constant velocity of  $90\text{ m s}^{-1}$  in horizontal flight. The diagram shows some