

- 7** A ball of mass  $m$  is dropped into a viscous fluid and is allowed to fall through the fluid until it is travelling at a constant speed  $v$ .

Which of the following statements is true when it is falling at terminal velocity?

- A** The kinetic energy of the ball is not a constant.
- B** The total mechanical energy of the ball is a constant.
- C** The gravitational potential energy of the ball is decreasing at a rate of  $mgv$ .
- D** The total resistive force acting on the ball is zero.

