

- 13** An airgun pellet, of mass m and specific heat capacity c , hits a steel plate at speed v . During the impact, 50% of the pellet's kinetic energy is converted to thermal energy in the pellet.

What is the rise in temperature of the pellet?

A $\frac{v^2}{2c}$

B $\frac{v^2}{4c}$

C $\frac{mv^2}{2c}$

D $\frac{mv^2}{4c}$

- 14** A pendulum oscillates with simple harmonic motion