13 A mass of 5.0 kg is moving in a straight line with a constant speed of $4.0\,\mathrm{m\,s^{-1}}$. A force of 10 N is then applied to the mass along the direction of motion and removed after the mass has travelled a distance of 2.5 m.

What is the increase in the kinetic energy of the mass due to the action of the force?

A 15 J   **B** 25 J   **C** 45 J   **D** 65 J