3 To find the resistivity of a semiconductor, a student makes the following measurements of a cylindrical rod of the material.

length = 25 ± 1 mm

diameter = 5.0 ± 0.1 mm

resistance = $68 \pm 1\,\Omega$

He calculates the resistivity to be $5.34 \times 10^{-2}\,\Omega$m.

How should the uncertainty be included in his statement of the resistivity?

A $(5.34 \pm 0.07) \times 10^{-2}\,\Omega$m

B $(5.34 \pm 0.09) \times 10^{-2}\,\Omega$m

C $(5.3 \pm 0.4) \times 10^{-2}\,\Omega$m

D $(5.3 \pm 0.5) \times 10^{-2}\,\Omega$m

4 An object is moving in a straight line. It now accelerates with a constant acceleration of 0.50 m s^{-2}