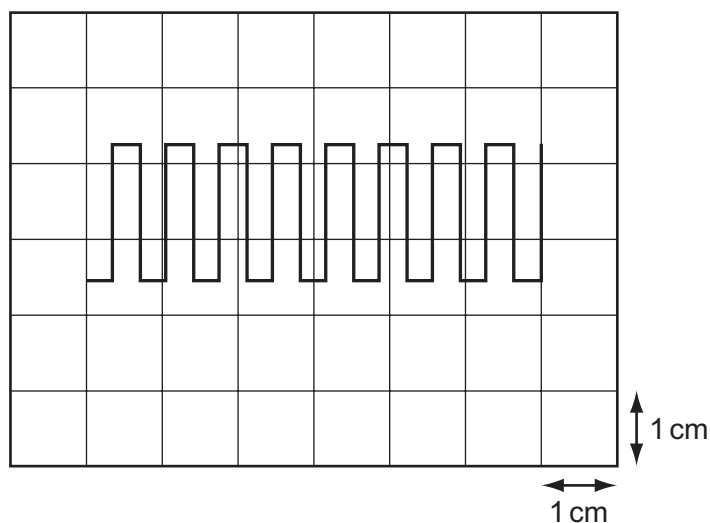**3** The diagram shows a square-wave trace on the screen of a cathode-ray oscilloscope. A grid of 1 cm squares covers the screen. The time-base setting is $10\,\text{ms}\,\text{cm}^{-1}$.

1 cm

1 cm

What is the approximate frequency of the square wave?

A 70 Hz **B** 140 Hz **C** 280 Hz **D** 1400 Hz

4 A student finds the density of a liquid by measuring its mass and its volume. The following is a summary of his measurements.

mass of empty beaker $= (20 \pm 1)\,\text{g}$

mass of beaker + liquid $= (70 \pm 1)\,\text{g}$

volume of liquid $= (10.0 \pm 0.6)\,\text{cm}^3$

He correctly calculates the density of the liquid as $5.0\,\text{g}\,\text{cm}^{-3}$.

What is the uncertainty in this value?

A $0.3\,\text{g}\,\text{cm}^{-3}$ **B** $0.5\,\text{g}\,\text{cm}^{-3}$ **C** $0.6\,\text{g}\,\text{cm}^{-3}$ **D** $2.6\,\text{g}\,\text{cm}^{-3}$

Space for working