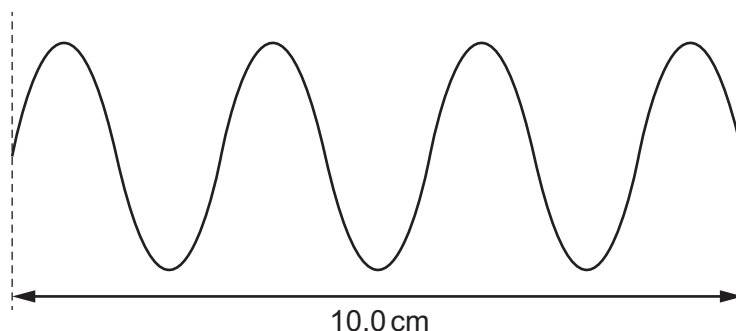


- 4 A student uses a cathode-ray oscilloscope (CRO) to measure the period of a signal. She sets the time-base of the CRO to  $5 \text{ ms cm}^{-1}$  and observes the trace illustrated below. The trace has a length of  $10.0 \text{ cm}$ .



What is the period of the signal?

- A**  $7.1 \times 10^{-6} \text{ s}$     **B**  $1.4 \times 10^{-5} \text{ s}$     **C**  $7.1 \times 10^{-3} \text{ s}$     **D**  $1.4 \times 10^{-2} \text{ s}$
- 5 The diameter of a spherical golf ball is measured with calipers and found to be  $(4.11 \pm 0.01) \text{ cm}$ .

The volume of a sphere is  $V = \frac{1}{6} \pi d^3$ , where  $d$  is the diameter of the sphere.

What is the volume of the golf ball?

- A**  $(36.35 \pm 0.01) \text{ cm}^3$   
**B**  $(36.35 \pm 0.03) \text{ cm}^3$   
**C**  $(36.35 \pm 0.09) \text{ cm}^3$   
**D**  $(36.4 \pm 0.3) \text{ cm}^3$