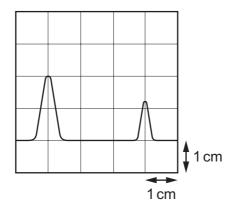
**5** A transmitter emits a pulse of electromagnetic waves towards a reflector. The pulse is reflected and returns to the transmitter.

A detector is located at the transmitter. The emitted pulse and the reflected pulse are displayed on a cathode-ray oscilloscope (c.r.o.) as shown.



The pulse takes  $6.3 \,\mu s$  to travel from the transmitter to the reflector.

What is the time-base setting of the c.r.o.?

- **A**  $2.1 \,\mu s \, cm^{-1}$
- **B**  $3.2 \,\mu s \, cm^{-1}$
- **C**  $4.2 \,\mu \text{s cm}^{-1}$
- **D**  $6.3 \, \mu s \, cm^{-1}$
- A hot-air balloon is moving vertically upwards with a constant speed of 3.00 m s<sup>-1</sup>. A sandbag is dropped from the balloon. It takes 5.00 s for the sandbag to fall to the ground.

What was the height of the balloon when the sandbag was released?

- **A** 29 m
- **B** 108 m
- **C** 123 m
- **D** 138 m