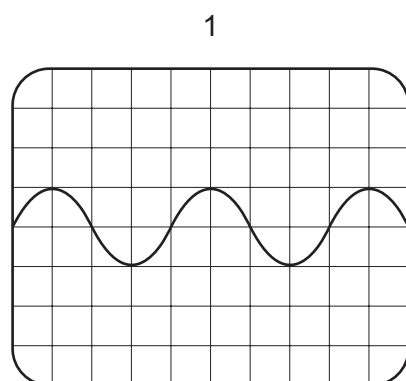
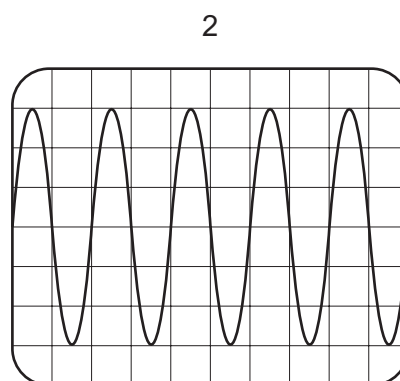


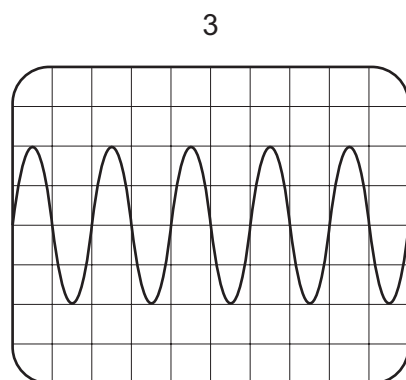
- 4 Four cathode-ray oscilloscope (CRO) screens each display a waveform. The screen and the time-base setting of each CRO is shown.



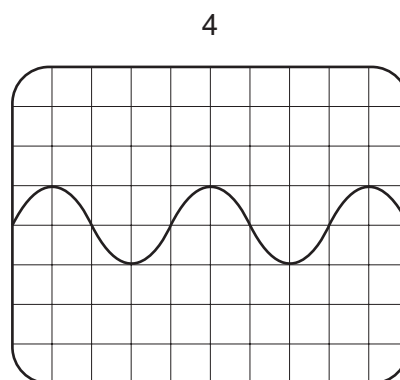
time-base setting: 0.02 s/div



time-base setting: 0.04 s/div



time-base setting: 0.01 s/div



time-base setting: 0.08 s/div

Which screens show waveforms of the same frequency?

- A** 1 and 2      **B** 1 and 3      **C** 1 and 4      **D** 2 and 3
- 5 A student measures the time  $T$  for one complete oscillation of a pendulum of length  $l$ . Her results are shown in the table.

$l/\text{m}$	$T/\text{s}$
$0.420 \pm 0.001$	$1.3 \pm 0.1$

She uses the formula

$$T = 2\pi \sqrt{\frac{l}{g}}$$

to calculate the acceleration of free fall  $g$ .

What is the best estimate of the percentage uncertainty in the value of  $g$ ?

- A** 0.02%      **B** 4%      **C** 8%      **D** 16%