

- 4 A student is investigating an electrical signal using a cathode-ray oscilloscope (c.r.o).

The frequency of the signal is 50 kHz.

Which time-base setting on the oscilloscope should be used?

- A** 50 ms cm<sup>-1</sup>      **B** 1 ms cm<sup>-1</sup>      **C** 10 μs cm<sup>-1</sup>      **D** 0.5 μs cm<sup>-1</sup>

- 5 A student wishes to measure a distance of about 10 cm to a precision of 0.01 cm.

Which measuring instrument should be used?

- A** metre rule  
**B** micrometer  
**C** tape measure  
**D** vernier calipers

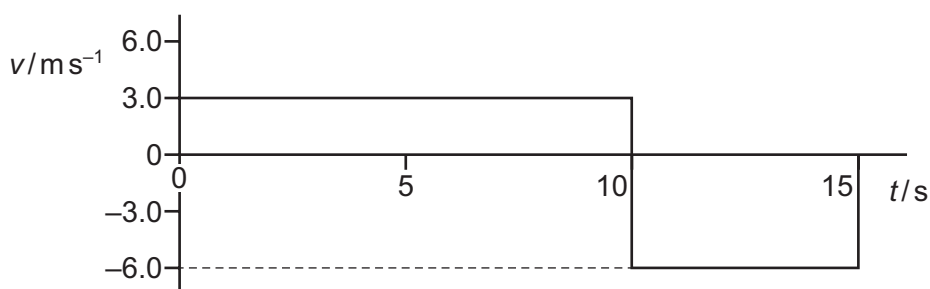
- 6 An aircraft, initially stationary on a runway, takes off with a speed of 85 km h<sup>-1</sup> in a distance of no more than 1.20 km.

What is the minimum constant acceleration necessary for the aircraft?

- A** 0.23 ms<sup>-2</sup>      **B** 0.46 ms<sup>-2</sup>      **C** 3.0 ms<sup>-2</sup>      **D** 6.0 ms<sup>-2</sup>

- 7 A radio-controlled toy car travels along a straight line for a time of 15 s.

The variation with time  $t$  of the velocity  $v$  of the car is shown.



What is the average velocity of the toy car for the journey shown by the graph?

- A** -1.5 ms<sup>-1</sup>      **B** 0.0 ms<sup>-1</sup>      **C** 4.0 ms<sup>-1</sup>      **D** 4.5 ms<sup>-1</sup>

- 8 The acceleration of free fall on Pluto is 0.66 m s<sup>-2</sup>.

An object weighs 6.0 N on Earth.

What would this object weigh on Pluto?

- A** 0.40 N      **B** 0.93 N      **C** 4.0 N      **D** 39 N