**1** What is a reasonable estimate of the average kinetic energy of an athlete during a 100 m race that takes 10 s?

**A** 40 J           **B** 400 J           **C** 4000 J           **D** 40 000 J

**2** When a force $F$ moves its point of application through a displacement $s$ in the direction of the force, the work $W$ done by the force is given by

$$W = Fs.$$

How many vector quantities and scalar quantities does this equation contain?

**A** one scalar quantity and two vector quantities

**B** one vector quantity and two scalar quantities

**C** three scalar quantities

**D** three vector quantities

**3** What is a possible unit for the product $VI$, where $V$ is the potential difference across a resistor and $I$ is the current through the same resistor?

**A** newton per second ($N\,s^{-1}$)

**B** newton second ($N\,s$)

**C** newton metre ($N\,m$)

**D** newton metre per second ($N\,m\,s^{-1}$)

**4** In an experiment, a radio-controlled car takes 2.50 ± 0.05 s to travel 40.0 ± 0.1 m.

What is the car's average speed and the uncertainty in this value?

**A** $16 \pm 1\,m\,s^{-1}$

**B** $16.0 \pm 0.2\,m\,s^{-1}$

**C** $16.0 \pm 0.4\,m\,s^{-1}$

**D** $16.00 \pm 0.36\,m\,s^{-1}$

**Space for working**