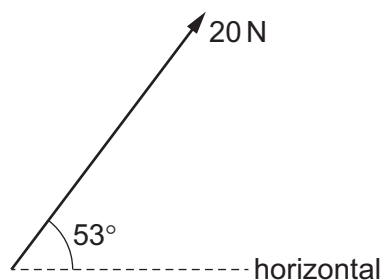**1** What is a reasonable estimate of the kinetic energy of an Olympic athlete sprinting in a 100 m race?

A 40 J   **B** 400 J   **C** 4000 J   **D** 40 000 J
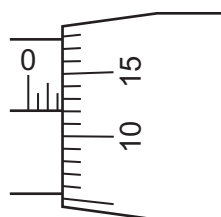
2 What is a unit of momentum?

A $kg\,m\,s^{-2}$ **B** $N\,s^{-1}$ **C** $N\,s$ **D** $kg\,s\,m^{-1}$

3 What is the horizontal component of the force shown?

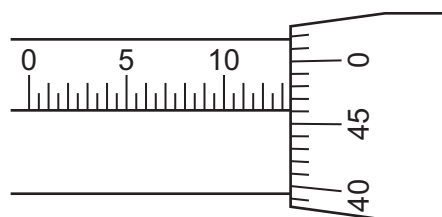

A 12 N   **B** 16 N   **C** 25 N   **D** 27 N

4 The diagram shows two readings on a micrometer.

reading 1   reading 2

What is the difference between the two readings?

A 10.34 mm   **B** 11.84 mm   **C** 12.34 mm   **D** 12.84 mm

5 The diameter of a circular disc is measured as (7.0 ± 0.1) mm.

What is the area of the disc and the absolute uncertainty in the area?

	area of disc / mm^2	absolute uncertainty / mm^2
A	38.5	± 0.5
B	38	± 1
C	154	± 2
D	154	± 4