5 A double-slit interference experiment is used to determine the wavelength of light from a monochromatic source.

The following measurements are used.

slit separation $a = 0.50 \pm 0.02\,\text{mm}$

fringe separation $x = 1.7 \pm 0.1\,\text{mm}$

distance between slits and screen $D = 2.000 \pm 0.002\,\text{m}$

What is the percentage uncertainty in the calculated wavelength?

A 0.1% **B** 1% **C** 6% **D** 10%

6 In still air, a bird can fly at a speed of $10\,\text{m s}^{-1}$. The wind is blowing from the east at $8.0\,\text{m s}^{-1}$.

In which direction must the bird fly in order to travel to a destination that is due north of the bird's current location?

A 37° east of north

B 37° west of north

C 53° east of north

D 53° west of north