

- 6 The strain energy  $W$  of a spring is determined from its spring constant  $k$  and extension  $x$ . The spring obeys Hooke's law and the value of  $W$  is calculated using the equation shown.

$$W = \frac{1}{2} kx^2$$

The spring constant is  $100 \pm 2 \text{ N m}^{-1}$  and the extension is  $0.050 \pm 0.002 \text{ m}$ .

What is the percentage uncertainty in the calculated value of  $W$ ?

- A** 6%                      **B** 10%                      **C** 16%                      **D** 32%