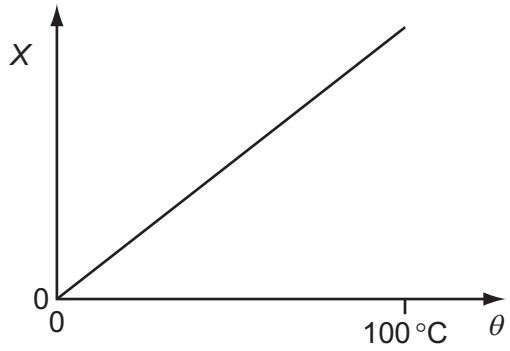
6 A quantity X varies with temperature θ as shown.



θ is determined from the corresponding values of X by using this graph.
X is measured with a percentage uncertainty of ± 1 % of its value at all temperatures.

Which statement about the uncertainty in θ is correct?

A The percentage uncertainty in θ is least near 0 °C.

B The percentage uncertainty in θ is least near 100 °C.

C The actual uncertainty in θ is least near 0 °C.

D The actual uncertainty in θ is least near 100 °C.

7 The measurement of a physical quantity may be subject to random errors and to systematic errors.

Which statement is correct?

A Random errors can be reduced by taking the average of several measurements.

B Random errors are always caused by the person taking the measurement.

C A systematic error cannot be reduced by adjusting the apparatus.

D A systematic error results in a different reading each time the measurement is taken.

Space for working