

- 4 What could reduce systematic errors?
- A averaging a large number of measurements
  - B careful calibration of measuring instruments
  - C reducing the sample size
  - D repeating measurements

- 5 The power loss  $P$  in a resistor is calculated using the formula  $P = \frac{V^2}{R}$ .

The percentage uncertainty in the potential difference  $V$  is 3% and the percentage uncertainty in the resistance  $R$  is 2%.

What is the percentage uncertainty in  $P$ ?

- A 4%                      B 7%                      C 8%                      D 11%
- 6 A lead sphere is released from rest at point X, a long way above the surface of a planet. The sphere falls in a vacuum. After a time of 4.0 s, it has fallen through a vertical distance of 3.0 m. Assume the acceleration of free fall is constant.

How far will the sphere have fallen from point X at a time of 20 s after its release?

- A 15 m                      B 75 m                      C 80 m                      D 2000 m
- 7 A box rests on the Earth, as shown.

Newton's third law describes how forces of the same type act in pairs. One of the forces of a pair is the weight  $W$  of the box.

Which arrow represents the other force of this pair?

