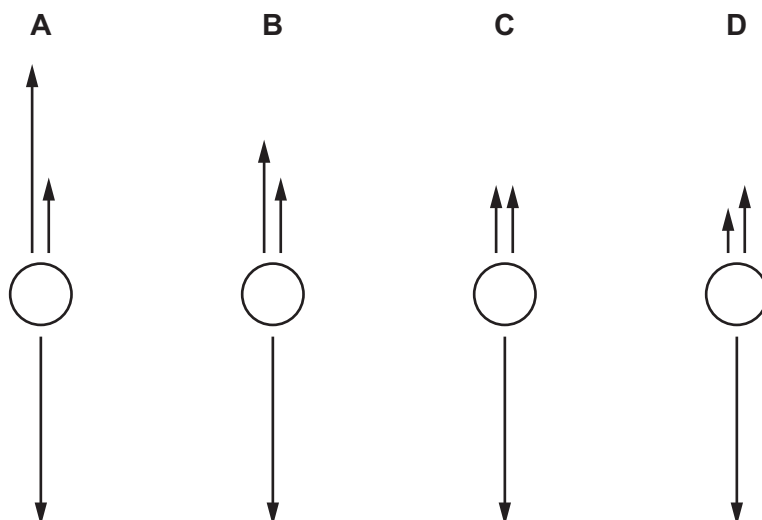


- 11 A spherical object falls through water at a constant speed. Three forces act on the object.

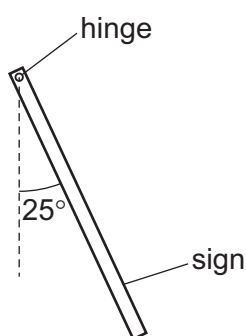
Which diagram, showing these three forces to scale, is correct?



- 12 Two forces act as a couple.

Which statement about the two forces must **not** be correct?

- A They act along the same straight line.
  - B They act in opposite directions.
  - C They are the same type of force.
  - D They have the same magnitude.
- 13 A sign outside a shop is suspended from a rusty horizontal hinge at its top end. The sign hangs in equilibrium at an angle of  $25^\circ$  to the vertical, as shown.



The sign is a square of side length 52 cm and uniform thickness. It has a mass of 36 kg.

What is the moment of the weight of the sign about the hinge?

- A 39 Nm
- B 78 Nm
- C 83 Nm
- D 92 Nm