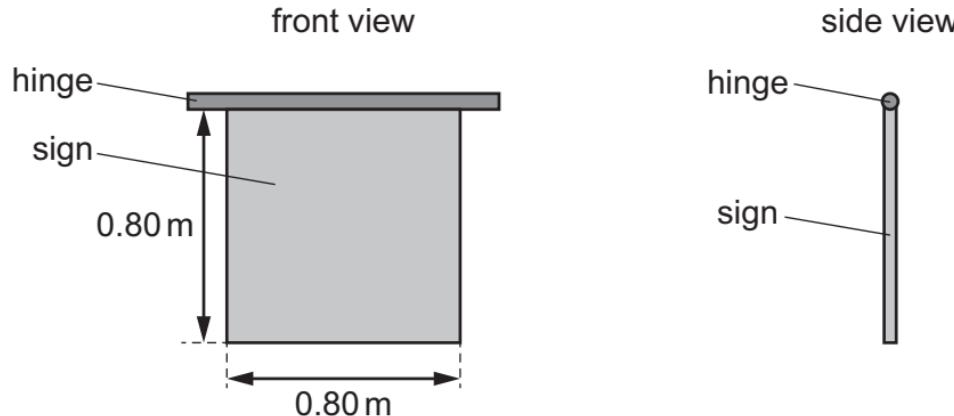


- 13 A uniform square sign of weight 40 N is suspended vertically from its top edge by a horizontal hinge, as shown.



The hinge is not frictionless. When the sign is displaced from the vertical by an external force and then released, it does not return to the vertical position.

The maximum torque exerted by the hinge on the sign is 6.0 N m. The sign is displaced by  $90^\circ$  so that it is horizontal and then gradually released.

At which angle to the vertical does the sign hang after release?

- A**  $11^\circ$       **B**  $22^\circ$       **C**  $68^\circ$       **D**  $79^\circ$