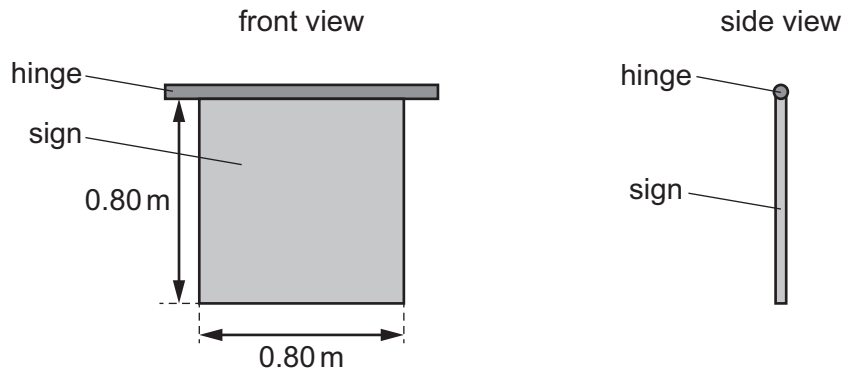


- 13** A uniform square sign of weight 40 N is suspended vertically from its top edge by a horizontal hinge, as shown.



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° so that it is horizontal and then gradually released.

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

- A** 11° **B** 22° **C** 68° **D** 79°

- 14** Each foot of a plank has a weight of 10 N. The plank is suspended from a wall with a hinge at one end and a rope at the other end. The rope is attached to the wall at a height of 1.4 m. The plank is