

A force of 5 N is applied to a door perpendicular to its face at a distance of 0.75 m from its hinge. What is the torque on the door about the hinge?

Solution

$$T(\text{torque}) = R \times F \times \sin \alpha$$

$\alpha = \text{angle between a force and a door}, R = \text{radius}, F = \text{force}$

$$T(\text{torque}) = 0.75 \times 5 \times \sin(90) = 3.75 \text{ Nm}$$