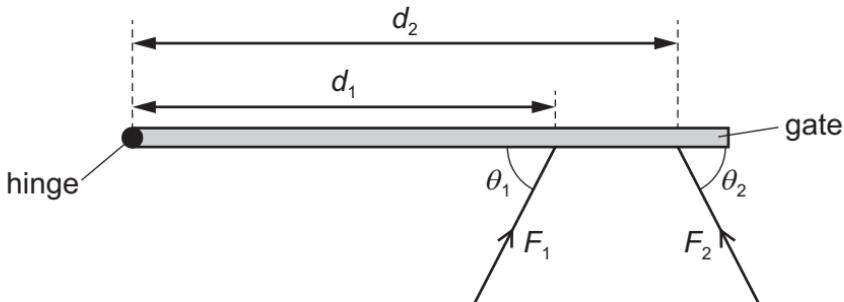


- 12 Two people push a vertical gate to open it. The forces exerted by the people on the gate are shown.



One person is distance d_1 from the gate's hinge and pushes with horizontal force F_1 at angle θ_1 to the gate.

The other person is at distance d_2 from the hinge and pushes with horizontal force F_2 at an angle θ_2 to the gate.

What is the total moment about the hinge due to forces F_1 and F_2 ?

- A $(d_1 \times F_1 \cos \theta_1) + (d_2 \times F_2 \cos \theta_2)$
- B $(d_1 \times F_1 \sin \theta_1) + (d_2 \times F_2 \sin \theta_2)$
- C $(d_1 \times F_1 \cos \theta_1) - (d_2 \times F_2 \cos \theta_2)$
- D $(d_1 \times F_1 \sin \theta_1) - (d_2 \times F_2 \sin \theta_2)$