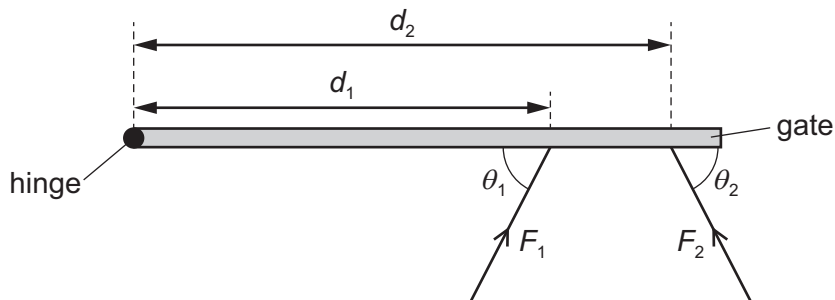


- 12 Two people push a vertical gate to open it. The forces exerted by the people on the gate are shown.



One person is distance  $d_1$  from the gate's hinge and pushes with horizontal force  $F_1$  at angle  $\theta_1$  to the gate.

The other person is at distance  $d_2$  from the hinge and pushes with horizontal force  $F_2$  at an angle  $\theta_2$  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  $(d_1 \times F_1 \sin \theta_1) - (d_2 \times F_2 \sin \theta_2)$