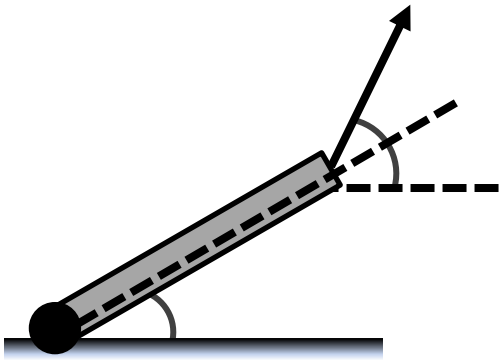
EXAMPLE: INCLINED BEAM AGAINST THE FLOOR

EXAMPLE**:** A 100 kg, 4 m-long beam is held at equilibrium by a hinge on the floor and a force you apply on its edge, as shown. The beam is held at 30^{o} above the horizontal, and your force is directed 50^{o} above the horizontal. Calculate the**:**

(a) Magnitude of the force you apply on the beam**;**

(b) Magnitude and direction of the Net Force the hinge applies on the beam**.**



PRACTICE: INCLINED BEAM AGAINST THE FLOOR

PRACTICE**:** A 200 kg, 10 m-long beam is held at equilibrium by a hinge on the floor and a force you apply on it via a light rope connected to its edge, as shown. The beam is held at 53º above the horizontal, and your rope makes an angle of 30º with it. Calculate the angle that the Net Force of the hinge makes with the horizontal **(**use **+/–** for above/below **+x).**