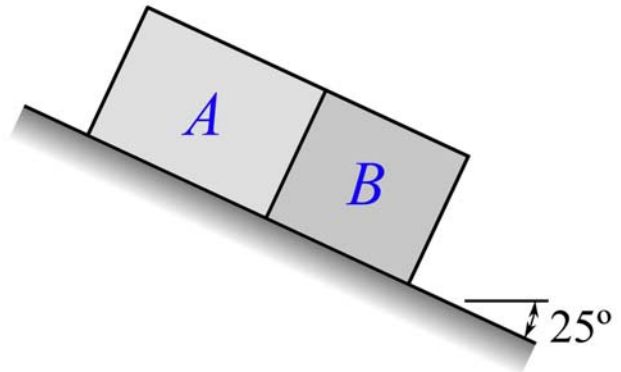


MEEG 2013 Quiz #2

A 30-kg block A and a 20-kg block B are sliding down an incline as shown. If the coefficient of kinetic friction μ_k is 0.2 between block A and the incline but 0.3 between block B and the incline, determine (a) the acceleration \mathbf{a} of the blocks, (b) the force \mathbf{F}_{AB} exerted by block B on block A .



$$FBD = EFD \text{ for block } A \quad \textcircled{3}$$

$$FBD = EFD \text{ for block } B \quad \textcircled{3}$$

$$\mathbf{a} = 2.01 \text{ m/s}^2 \text{ at } \theta_a = 335^\circ \quad \textcircled{2}$$

$$\mathbf{F}_{AB} = 10.67 \text{ N at } \theta_F = 155^\circ \quad \textcircled{2}$$