



A uniform square lamina $ABCD$ of side $4a$ and weight W rests in a vertical plane with the edge AB inclined at an angle θ to the horizontal, where $\tan \theta = \frac{1}{3}$. The vertex B is in contact with a rough horizontal surface for which the coefficient of friction is μ . The lamina is supported by a smooth peg at the point E on AB , where $BE = 3a$ (see diagram).

- (i) Find expressions in terms of W for the normal reaction forces at E and B . [5]
- (ii) Given that the lamina is about to slip, find the value of μ . [3]