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A uniform rectangular lamina $ABCD$ has a mass of $0.5\,\text{kg}$. The length of AB is $2\,\text{m}$, and the length of BC is $6\,\text{m}$. The lamina is in limiting equilibrium with corner A in contact with rough horizontal ground and corner D in contact with a smooth vertical wall. The lamina rests in a vertical plane that is perpendicular to the wall, with AD inclined at $50°$ to the horizontal (see diagram).

(a) By taking moments, show that the magnitude of the normal contact force between the lamina and the wall is $1.24\,\text{N}$, correct to **3** significant figures. **[4]**

(b) Determine the coefficient of friction between the lamina and the ground. **[3]**