1. Friction and Static Particles

If there is no motion, the maximum frictional force, F_{max}, has not yet been reached.
When $F_{max} = \mu R$, the body is on the point of moving. This is called *limiting equilibrium*.
In Statics, the force of friction, F, is such that $\leq \mu R$, and the direction of the friction force is **opposite** to the direction in which the body would move if the friction force were absent.

Example

A 10kg truck lies on a horizontal rough floor. The coefficient of friction between the trunk and the floor is $\frac{\sqrt{3}}{4}$.

Calculate the magnitude of the force, P, which is necessary to pull the trunk horizontally if P is applied:
a) horizontally
b) at 30^O above the horizontal