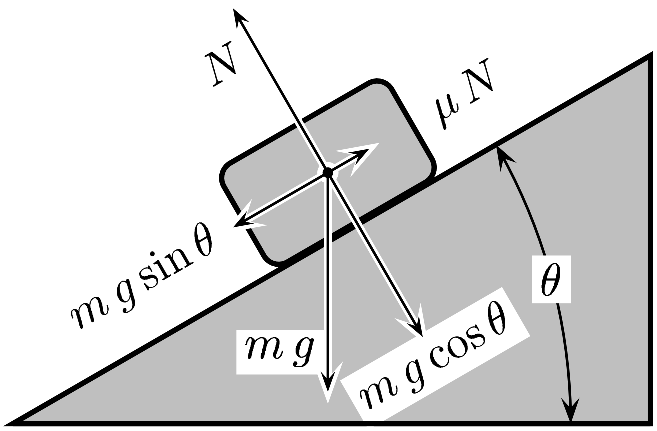
Critical angle of inclined plane for the block is $\theta_c = 45^\circ$, or $\mu_s = \tan\theta_c = 1$.



Find frictional force f for $\theta = 60^\circ$.

A) $f = \mu_s\, m\, g_\| = \mu_s\, m\, g \sin 45^\circ$.
B) $f = \mu_s\, m\, g_\perp = \mu_s\, m\, g \cos 60^\circ$.
C) $f = \mu\, m\, g_\| = \mu_k\, m\, g \sin 60^\circ$.
D) $f = \mu\, m\, g_\| = \mu_k\, m\, g \sin 45^\circ$.
E) $f = \mu\, m\, g_\perp = \mu_k\, m\, g \cos 60^\circ$.

Hint: $f_s \le f_s^{max} = \mu_s N$ and $f_k = \mu_k$ N.

Since the slope of 60° is greater than that given by the critical angle, we expect the block to slide. The corresponding kinetic friction $f_k = \mu_k N$, where N is the magnitude of the normal force with which the surface pushes the block.

Newton's third law implies it is also of the magnitude of the perpendicular force which the block asserts on the surface. So $N = m\, g_\perp$, and $f = \mu\, m\, g_\perp = \mu_k\, m\, g \cos 60^\circ$.

Answer **E**.