Review problem

A 100 lb crate is pulled by a rope attached to the corner D at an angle of θ as shown. The coefficients of static and kinetic friction between the crate and the surface are μ_S = 0.4 and μ_K =0.3, respectively.

(a) Find the angle θ and the force P for which tipping and impending sliding happen simultaneously.
(b) Find the acceleration of the crate just after it starts sliding. (Hint: The normal force at A is no longer zero when sliding ensues.)