PHYS 1410: PHYSICAL SCIENCE (FW 2012/2013)

Additional problem for Oct. 9

A worker pushes horizontally on a 35 kg crate with a force of magnitude 110 N. The coefficient of static friction between the crate and the floor is 0.37.

1. What is the maximum value of the force of static friction under these circumstances?
2. Does the crate move?
3. What is the frictional force on the crate from the floor?
4. Suppose, next, that a second worker pulls directly upward on the crate to help out. What is the least vertical pull that will allow the first worker's 110 N push to move the crate?
5. If, instead, the second worker pulls horizontally to help out, what is the least pull that will get the crate moving?