

Names: _____

A worker of mass $M = 74$ kg wants to place a ladder of mass $m = 2.25$ kg against a wall so he can climb to the top of the ladder. If the maximum coefficient of static friction between the wall and the ladder is $\mu_w = 0.61$ and the maximum coefficient of static friction between the floor and the ladder is $\mu_f = 0.95$, what is the minimum angle the ladder can make with the floor?

1. draw a diagram that includes important information (forces, origin, etc.)
2. identify the quantities given and the quantities to find
3. identify the principles that apply
4. write the equation(s) you need to solve the problem
5. rewrite the equation(s) in a form that isolates the unknown quantity
6. solve for the unknown quantity (show your work, using the back of this sheet if necessary)
7. make sure you have the correct units and significant figures and record your answer below

Answer: $\theta =$ _____