

Problem 1: Using the concept of the coefficient of friction, explain why you sometimes slip when the floor is wet.

For numbers 2 and 3: A package is being delivered by a courier, but the rear gate of the truck is open, making the package slide down once in motion. The coefficients of kinetic friction and static friction between the package and surface are 0.421 and 0.530, respectively.

Problem 2: Draw the free-body diagram of the package.

Problem 3: Assuming that the truck starts from rest, find the shortest possible time the truck could accelerate to 15.0 m/s without causing the package to slide.

For numbers 4 and 5: You have probably noticed how beds can be tilted in the hospitals. The coefficient of friction between you and the bedsheet is 0.80.

Problem 4: Draw the free body diagram for this problem.

Problem 5: Find the maximum angle the bed can be tilted before you begin sliding.