1. Cars without anti-lock brakes often lock their wheels during hard braking. In this case, the tires skid along the road and experience kinetic friction. Anti-lock brakes keep the wheels from skidding by pulsing the brakes so that the car experiences static friction. Suppose the coefficient of static friction between the tires and the road is 0.650 and the coefficient of kinetic friction is 0.600. Find the minimum stopping distance for a car traveling 80.0km/h with (a)anti-lock brakes and (b)traditional brakes. Why are anti-lock brakes considered safer?

2. A working elephant (http://www.youtube.com/watch?v=g91mK1sMiSI) drags a 85.0kg log along the ground at a constant speed by pulling with a chain that has a tension of 500N and is at 35.0˚ above horizontal. Find (a)the frictional force and (b)the coefficient of friction between the ground and the log.

3. A crate slides down a 20.0˚ ramp with a coefficient of kinetic friction of 0.200. Find the acceleration of the crate.

4. Check out these cars (http://www.youtube.com/watch?v=CXFZMGddENA) trying to get up an icy hill. Some make it and some do not. Assume the incline is 15.0˚. Find the minimum coefficient of friction between the road and the tires if the car is to make it up the hill. What do you think is the key property of the tires that determines success?