R. Knight 11.51

A 50 kg ice skater is gliding along the ice, heading due north at 4.0 m/s. The ice has a small coefficient of static friction, to prevent the skater from slipping sideways, but the kinetic friction coefficient equals zero. Suddenly, a wind from the northeast exerts a force of 4.0 N on the skater.

a. Use work and energy to find the skater's speed after gliding 100 m in this wind.

b. What is the minimum value for the static friction coefficient that allows her to continue moving straight north?