HW5-15 Soln)

Let up be positive, as well as toward the center of the circle.

NII:

$$\text{c:}\quad +F_N = ma_C = m\omega^2 r$$

$$\text{y:}\quad +F_{fS} - gm = ma_y = 0$$

$$F_{fS} = \mu_S F_N \text{ (crit. sit.)}$$

Then,

$$\mu_S = \frac{F_{fS}}{F_N} = \frac{gm}{m\omega^2 r} = \frac{g}{\omega^2 r} = \frac{10}{7^2(5)} = 0.041$$