Question 1:

A 500 lb box is sitting on concrete floor. If the static coefficient of friction is .7 and the kinetic coefficient of friction is .6:

a) What is the friction force if the pulling force is 150 lbs?

b) What pulling force would be required to get the box moving?

c) What is the minimum force required to keep the box moving once it has started moving?

\[ F_{\text{fmax}} = (M_s)(F_N) \]

\[ \Sigma F_y = F_N - 500 = 0 \]

\[ F_N = 500 \text{ lbs} \]

\[ F_{\text{fmax}} = (0.7)(500) \]

\[ F_{\text{fmax}} = 350 \text{ lbs} \]

If \( F_{\text{pull}} = 150 \text{ lbs} \) then \( F_F = 150 \text{ lbs} \)
b) to get it started

\[ F_{\text{pull}} = (M_s)(F_N) = (0.7)(500) \]
\[ F_{\text{pull}} = 350 \text{ lbs} \]

c) to keep it going

\[ F_{\text{pull}} = (M_y)(F_N) = (0.6)(500) \]
\[ F_{\text{pull}} = 300 \text{ lbs} \]