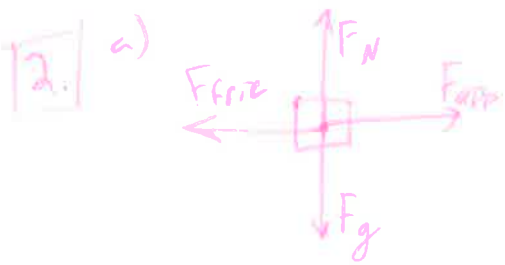


1.  $\mu_k = 0.10$        $F_N = 5N$        $F_{fric} = \mu_k \cdot F_N$

$F_{fric} = 0.10 \cdot 5N = 0.5N$



b)  $w = F_g = m \cdot a = 4.0kg \cdot -9.8m/s^2 = -39.2N$

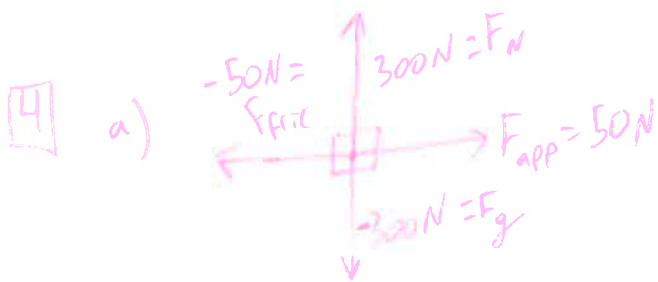
c)  $F_g = -F_N = 39.2N$       d)  $\mu_k = 0.20$        $F_f = 0.20 \cdot 39.2N = 7.84N$

e)  $F_{net} = F_{app} + F_{fric} = 10N + (-7.84N) = 2.16N$

f)  $F_{net} = m \cdot a \rightarrow \frac{2.16}{4.0} = \frac{4.0kg \cdot a}{4.0} = 0.54m/s^2 = a$

3  $F_{app} = F_{fric} = \mu_s \cdot F_N \rightarrow \frac{10N}{39.2} = \frac{\mu_s \cdot 39.2N}{39.2}$

$\mu_s = 0.26$



b)  $F_{fric} = \mu_k \cdot F_N \rightarrow \frac{50N}{300} = \frac{\mu_k \cdot 300}{300}$   
 $\mu_k = 0.16$

c)  $F_g = m \cdot a = \frac{300N}{9.8} = \frac{m \cdot 9.8m/s^2}{9.8} = 30.6kg$

d)  $F_{net} = F_{app} + F_{fric} \rightarrow F_{fric} = \mu \cdot F_N \rightarrow \frac{50N}{30.6} = \frac{\mu \cdot 30.6 \cdot a}{30.6}$   
 $a = 1.63m/s^2$

