

74. Except for replacing f_s with f_k , Fig. 6-5 in the textbook is appropriate. With that figure in mind, we choose uphill as the $+x$ direction. Applying Newton's second law to the x axis, we have

$$f_k - W \sin \theta = ma \quad \text{where} \quad m = \frac{W}{g} ,$$

and where $W = 40 \text{ N}$, $a = +0.80 \text{ m/s}^2$ and $\theta = 25^\circ$. Thus, we find $f_k = 20 \text{ N}$. Along the y axis, we have

$$\sum \vec{F}_y = 0 \quad \Rightarrow \quad N = W \cos \theta$$

so that $\mu_k = f_k/N = 0.56$.