

84. (Second problem in **Cluster 1**)

- (a) Newton's second law applied to the x axis yields $F - mg \sin \theta = ma$. Thus, with $F = 40.0$ N, we find $a = -0.90 \text{ m/s}^2$. The interpretation is that the magnitude of the acceleration is 0.90 m/s^2 and its direction is downhill.
- (b) Substituting $F = 60.0$ N into $F - mg \sin \theta = ma$, we find $a = 1.1 \text{ m/s}^2$. Thus, the acceleration is 1.1 m/s^2 uphill.