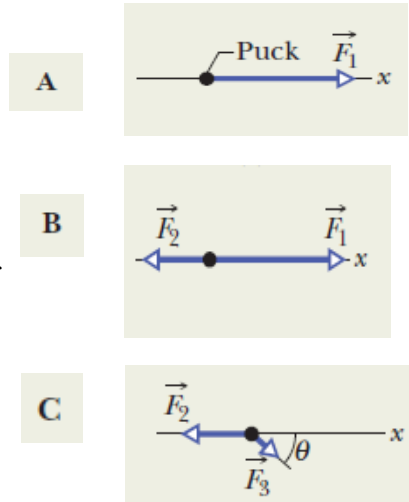


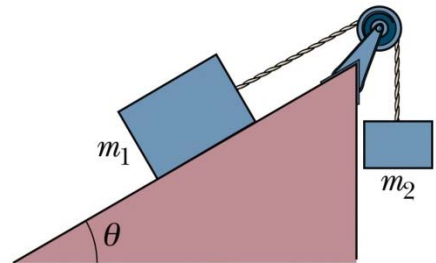
## Chapter 4

### Example Problems

1. Parts A, B, and C of the figure show three situations in which one or two forces act on a puck that moves over frictionless ice along an  $x$ -axis. The puck's mass is  $m = 0.20$  kg. Forces  $\mathbf{F}_1$  and  $\mathbf{F}_2$  are directed along the axis and have magnitudes  $F_1 = 4.0$  N and  $F_2 = 2.0$  N. Force  $\mathbf{F}_3$  is directed at an angle of  $30^\circ$  and has magnitude  $F_3 = 1.0$  N. In each situation, what is the acceleration along the  $x$ -axis of the puck?



2. A block of mass  $m_1 = 3.70$  kg on a frictionless plane inclined at an angle of  $30^\circ$  is connected by a cord over a massless, frictionless pulley to a second block of mass  $m_2 = 2.30$  kg. What are the magnitude of the acceleration of each block and the tension in the cord?



3. In the figure, a passenger of mass  $m = 72.2$  kg stand on a platform scale in an elevator cab. We are concerned with the scale readings when the cab is stationary and when it is moving up and down.
- Find a general solution for the scale reading whatever the vertical motion of the cab.
  - What is the magnitude of the normal force if the car is accelerating at a constant  $0.5$  m/s<sup>2</sup>?

