

61. (a) Intuition readily leads to the conclusion (that the heavier block should be the hanging one, for largest acceleration). The force that “drives” the system into motion is the weight of the hanging block (gravity acting on the block on the table has no effect on the dynamics, so long as we ignore friction).
- (b) In Sample Problem 5-5 (where it was assumed the  $m$  is the hanging block) Eq. 5-21 gave the acceleration. Now that we have switched  $m \leftrightarrow M$  (so that now  $M$  is the hanging block) our new version of Eq. 5-21 is

$$a = \frac{M}{m + M} g = 6.5 \text{ m/s}^2 .$$

- (c) Switching  $m \leftrightarrow M$  has no effect on Eq. 5-22, which yields

$$T = \frac{mM}{m + M} g = 13 \text{ N} .$$