In the drawing shown the block on the table has a mass of 40.0 kg mass and the hanging block has a mass of 20.0 kg. The coefficient of kinetic friction between the table and the 40.0 kg block is 0.300.

A. [20 pts.] What is the magnitude of the acceleration of the descending block?

\[ T - F_k = m_1 a \] (7 pts)
\[ W_2 - T = 2m_2 a \] (7 pts)
\[ \frac{W_2 - F_k}{W_2} = \frac{(m_1 + m_2)}{a} \]
\[ a = \frac{W_2 - F_k}{m_1 + m_2} = \frac{196 N - 118 N}{60 \text{ kg}} \]
\[ a = 1.31 \text{ m/s}^2 \] (2 pts)

B. [10 pts.] What is the magnitude of the tension the block on the table feels?

\[ T = m_1 a + F_k \] (7 pts)
\[ = (1.31 \text{ m/s}^2)(40 \text{ kg}) + 118 N \]
\[ T = 170 \text{ N} \] (3 pts)

C. [4 pts.] If the descending block, starting from rest, falls 1.20 m, what is the net work the tension felt by both blocks does?

\[ W_{\text{TOTAL}} = T \Delta x - T \Delta x = 0 \]
\[ W_{\text{TOTAL}} = 0 \]