1. Find the tension in the top string.

\[ T = 294 \text{ N} \]
2. Find the acceleration of the system. \((m_1=10\text{kg} \; m_2=15\text{kg}, \text{no friction})\)

\[ a = 5.88 \text{ m/s}^2 \]

3. Find the mass of the orange block if the system is in equilibrium

\[ m = 40 \text{ kg} \]
4. Will the system shown below move? ($\mu_s = 0.3$ between blocks only)

\[ a \neq 0 \text{ m/s therefore the system moves} \]

5. Car on banked curve. Inclined at an angle of 30 and has a radius of 500m. Find velocity so it does not slide up or down the curve.

\[ V = 53.2 \text{ m/s} \]