Recall Atwood's machine — two different masses connected by a string that runs over a frictionless, massless pulley. As I'm sure you remember the heavier mass "wins" and is pulled down by gravity, which means that the lighter mass is raised up as much as the heavier mass falls.

If $m_1 = 100$ g and $m_2 = 50$ g, what is the total kinetic energy of the system after m_1 has fallen 30 cm?

