4-1. A double pulley consists of two parts that are holding together. It has a mass of $m_O \sim N(20, 2^2)$ kg and a radius of gyration around its center of $k_O = 0.6$ m. The smaller part with $r_B = 0.4$ m is connected to a heavier mass B, $m_B \sim N(20, 2^2)$ kg, while the bigger part with $r_A = 0.8$ m is connected to a lighter mass A, $m_A \sim N(10, 1^2)$ kg. Determine the kinetic energy of the system when $\omega = 2$ rad/s clockwise. Assume the weight of the cables is negligible and they do not slip.

Solution: $T \sim N(33.60, 2.03^2)$ J