35. Since the rotational inertia of a cylinder is $I = \frac{1}{2}MR^2$ (Table 11-2(c)), its rotational kinetic energy is

$$K = \frac{1}{2}I\omega^2 = \frac{1}{4}MR^2\omega^2 \ .$$

For the first cylinder, we have $K = \frac{1}{4}(1.25)(0.25)^2(235)^2 = 1.1 \times 10^3\,\text{J}$. For the second cylinder, we obtain $K = \frac{1}{4}(1.25)(0.75)^2(235)^2 = 9.7 \times 10^3\,\text{J}$.