4. Kinetic energy is defined as one half the mass times the square of the velocity.

$$
\begin{aligned}
\mathrm{KE} & =1 / 2 \mathrm{~m} \mathrm{v}^{2} \\
\mathrm{KE} & =(1 / 2)(3.0 \mathrm{~kg})(8.0 \mathrm{~m} / \mathrm{s})^{2} \\
\mathrm{KE} & =96 \mathrm{~J}
\end{aligned}
$$

