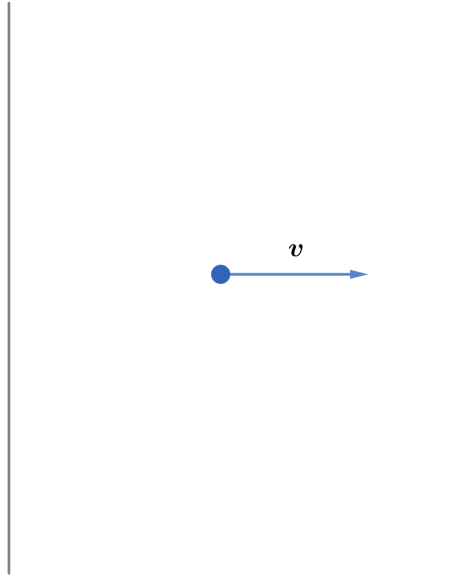


2007 F=ma Exam: Problem 20

Kevin S. Huang



The kinetic energy is given by

$$E = \frac{1}{2}mv^2 \propto v^2$$

Since each collision reduces E by a factor of 2, v is reduced by a factor of $\sqrt{2}$. We have

$$\sqrt{2}^6 = 8$$

so 6 collisions would reduce v by a factor of 8. Thus, the answer is C.