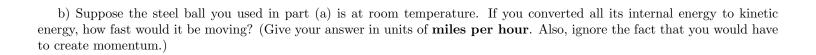
Additional Problem IX for Physics 6

Converting typical kinetic energies that we are used to into thermal energy typically produces <i>small</i> rises in temperature; this
was in part responsible for the difficulty in discovering the law of conservation of energy. It also implies that hot objects contain
a lot of energy. (This latter comment is largely responsible for the industrial revolution in the 19th century.) To get some feel
for these numbers, carry out three estimates:
a) A steel ball is dropped from a height of three meters onto a concrete floor. It bounces a large number of times but
eventually comes to rest. Estimate the ball's rise in temperature.



c) Suppose a nickel-iron meteor falls to the earth from deep space. Estimate how much its temperature would rise on impact.