

- 11** The Earth may be considered to be a uniform sphere of mass M and radius R . An apple of mass m falls from rest from a height h to the ground, where $h \ll R$ such that the gravitational field strength g experienced by the apple during its fall may be assumed to be constant.

What is the gain in kinetic energy of the apple?

A mgR

B $\frac{GMmh}{R^2}$

C $\frac{GM}{R} - \frac{GM}{R+h}$

D $m\left(\frac{GM}{R+h} - \frac{GM}{R}\right)$