1 Escape Speed

In this problem assume that there is no atmospheric friction, and use a static model for the earth. You may use: the acceleration do to gravity on the surface of the earth is $g = G\frac{M_E}{R_E^2} = 9.8\text{m/s}^2$, and the raduis of the earth is $R_E = 6.38 \times 10^6\text{m}$.

1.1

Find the escape speed v_{es} – that is the initial speed when released from the surface of the earth that would allow a projectile to escape from the earth completely. Hint: Use conservation of energy, kinetic plus gravitational potential energy.