59. The total energy is given by $E = -GMm/2a$, where M is the mass of the central attracting body (the Sun, for example), m is the mass of the object (a planet, for example), and a is the semimajor axis of the orbit. If the object is a distance r from the central body the potential energy is $U = -GMm/r$. We write $\frac{1}{2}mv^2$ for the kinetic energy. Then, $E = K + U$ becomes $-GMm/2a = \frac{1}{2}mv^2 - GMm/r$. We solve for v^2. The result is

$$v^2 = GM\left(\frac{2}{r} - \frac{1}{a}\right) \ .$$