

We call  $v_0$  the escape velocity (speed)

e.g. for the Earth,  $v_0 = 11.2 \text{ km s}^{-1}$  (check!)

Jupiter,  $v_0 = 59.6 \text{ km s}^{-1}$

So if the projectile is launched with  $E_{\text{tot}} \geq 0$ , it will escape from the planet's gravity; if  $E_{\text{tot}} < 0$ , it will not escape.

- Note that  $v_{\text{Escape}}$  doesn't depend on the mass of the projectile

### Tidal Forces

Consider a planet (P) and moon (M), of radius  $R_p$  and  $R_m$  and mass  $M_p$  and  $M_m$

