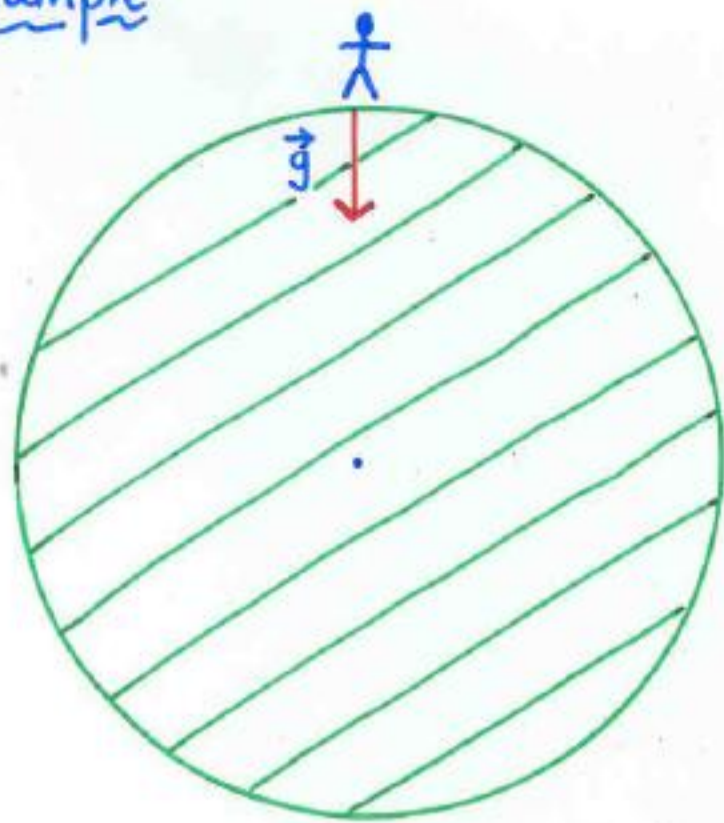


Example



=



Spherical planet, radius R ,
total mass M

$$\vec{g} = \frac{GM}{R^2}, \text{ directed towards centre}$$

Magnitude of \vec{g} = **SURFACE GRAVITY**

e.g. $M_{\text{Earth}} = 5.974 \times 10^{24} \text{ kg}$; $R_{\text{Earth}} = 6.378 \times 10^6 \text{ m}$

\Rightarrow $g_{\text{Earth}} = 9.80 \text{ ms}^{-2}$

g measures the rate of acceleration of
falling objects (neglecting air resistance)