Gravity Equations 03

$a = \frac{v^2}{R}$ $\qquad$ $v = \frac{2\pi R}{T}$

$F = m \bullet a$ $\qquad$ $F = m \bullet g$ $\qquad$ $F_g = \frac{G \bullet M \bullet m}{R^2}$

$$\frac{G \cdot M \cdot m}{R^2} = \frac{4 \cdot m \cdot \pi^2 \cdot R}{T^2}$$

$\frac{R^3}{T^2} = K$ $\qquad$ *Kepler's Law*

$v = \sqrt{\frac{G \cdot M}{R}}$ $\qquad$ *satellite speed (circular orbit)*

$E_p = -\frac{G \cdot M \cdot m}{R}$ $\qquad$ *gravitational potential energy*

$W = \Delta E_p$ $\qquad$ *work = change in potential energy*

$v_{escape} = \sqrt{\frac{2 \cdot G \cdot M}{R}}$ $\qquad$ *escape speed*

$E_t = E_k + E_p$ $\qquad$ *total energy = kinetic energy + potential energy*

$E_{t1} = E_{t2}$ $\qquad$ *total energy is conserved*