Newton's Law
\[ \vec{F} = -G \frac{m_1 m_2}{r^2} \text{ due to } M \]

urg_{rev} = -G \frac{m_1 m_2}{r_f - r_i} \]

KEPLER
1) All closed orbits are ellipses
2) Angular momentum \( \vec{L} = m \vec{r} \times \vec{v} \) conserved
3) \( \frac{T^2}{a^3} \approx \frac{1}{a^{3/2}} \)

Period of

Office Hours:
Fri 11:00 and Learning CA

2 more relevant findings of Newtonian gravitation

Virial Theorem:
\[ \frac{T_i}{2} = -\frac{1}{2} U_{pot} \]

Collection of pre-mooning, permanently bound masses

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