- Last Lecture
  - Energy and Gravity
- Today
  - Lots of examples
- Important Concepts
  - Gravity depends on the product of the two masses and the inverse of the distance squared.
  - In the standard convention, the PE of gravity is negative.
  - "Escape velocity" is the speed needed to get very far away from something but with no speed left over.

Important Reminders

- Exam #3 is next Friday at 10am.
- Pset #9 due tomorrow.
- IAP class schedule is posted under "General Info".
- Next MasteringPhysics due next Monday.

Gravity Summary

- Numerical constant: $G = 6.673 \times 10^{-11} \frac{Nm^2}{kg^2}$
- Force: $F_G = -\frac{GM_1M_2}{r^2}\hat{r}$
- Energy: $PE(r) = -\frac{GM_1M_2}{r}$
- Escape velocity: $E_{Total} = KE + PE = 0$

Lots of Examples

- Geosynchronous satellites
- Black holes
- Binary stars
- Rockets