Physics 131 10/1/13

October 1 2013 Physics 131 Prof. E. F. Redish Theme Music: Blue Man Group Tension 2 **Cartoon:** Jef Mallet Frazz. MAN, THIS HOMEWORK IS SAMMY, LIGHT-YEARS ARE A UNIT OF DISTANCE, 50? 50!?! YOU DON'T MEASURE ONE PROPERTY PIPE DOWN, CAULFIELD. YOU'RE MAKING A TON OF NOISE. 50? GONNA TAKE LIGHT-YEARS. WITH ANOTHER UNIT! THAT'S LIKE SAYING NOT TIME. Something weighs 50 miles per hour!! 10/1/13 Physics 131

Exam

- In class Thursday 2:00-3:20.
- Covers all readings through today.
- Footholds to be covered will be posted this afternoon as "Lecture Notes" for Thursday.
- Solution to Sample Exam problems will be posted this evening.
- Course center hours this week as usual.
- Q&A session here Wednesday 5-6:50

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Foothold Principles Newton's Laws



- Newton 0:
 - An object responds to the forces it feels when it feels them.
- Newton 1:
 - An object that feels a net force of 0 keeps moving with the same velocity (which may = 0).
- Newton 2:
 - An object that is acted upon by other objects changes its velocity according to the rule $\vec{a}_A = \frac{\vec{F}_A^{net}}{m_A}$
- Newton 3:
 - When two objects interact the forces they exert on each other are equal and opposite. $\vec{F}_{A \to B}^{type} = -\vec{F}_{B \to A}^{type}$

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Kinds of Forces

- Forces are what objects do to each other when they interact.
- Types of Force

- Normal: N - Weight: W

- Tension: T - Electric: F^E

- Friction: f, F^D, F^V - Magnetic: F^M

■ Notation convention.

 $\vec{F}_{(\text{object causing force)}
ightarrow (\text{object feeling force)}}$

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