December 3, 2013 Physics 131 Prof. E. F. Redish

- **Theme Music: John Williams**

  Learn about the force *from Star Wars*

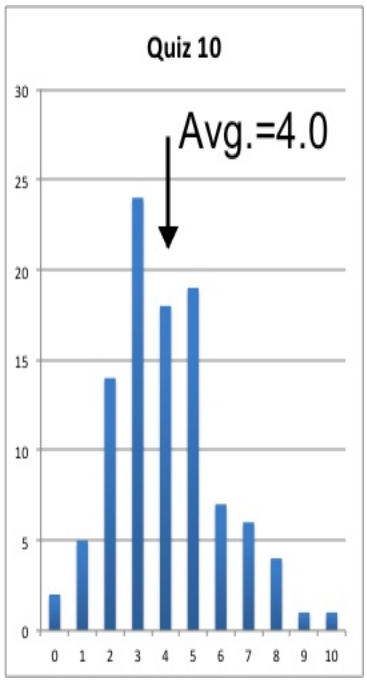
- **Cartoon: Mike Peters**

  Mother Goose & Grimm

12/3/13 Physics 131 **1**

Quiz 10

	1		2	3.1	3.2
A	51%	A	17%	8%	30%
B	8%	B	74%	34%	3%
C	69%	C	5%	16%	7%
D	41%	D	3%	9%	3%
E	55%	E	0%	2%	4%
F	2%	F	2%	28%	10%
		G	0%	4%	4%
		H	0%	0%	37%
		N	0%	0%	4%



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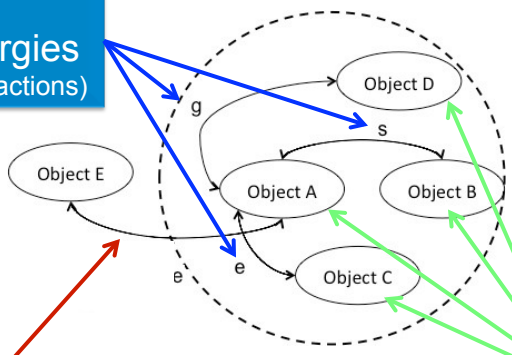
Which Energies add to give Total Mechanical Energy?

YES
Potential Energies
(Conservative Interactions)



NO
Work done by Interactions that cross System Boundary

YES
Kinetic Energy
(in general, all objects)

Using Mechanical Energy Conservation

- If resistive forces can be ignored, mechanical energy is conserved (exchanges with hidden internal energy such as thermal or chemical can be ignored)

$$KE_i + PE_i = KE_f + PE_f$$

- *KE* may refer to one or more objects
  PE may refer to one or more interactions.
- If only one object's KE is important and only one interaction matters, this can make things really easy.