

Egg placed in boiling water



	$\Delta U_{\text{internal}}$	Q (heat absorbed BY the system)	W (work done on the system)
1	> 0	0	< 0
2	< 0	0	> 0
3	0	> 0	> 0
4	> 0	> 0	0
5	< 0	> 0	> 0
6	0	< 0	> 0
7	> 0	< 0	< 0
8	< 0	< 0	0
9	0	0	0

Man stands still holding a weight at arm's length.



	$\Delta U_{\text{internal}}$	Q (heat absorbed BY the system)	W (work done on the system)
1	> 0	0	< 0
2	< 0	0	> 0
3	0	> 0	> 0
4	> 0	> 0	0
5	< 0	> 0	> 0
6	0	< 0	> 0
7	> 0	< 0	< 0
8	< 0	< 0	0
9	0	0	0

The Gauss gun



Spheres numbered 1, 2, and 3 all “stick” when added one at a time. Which is more tightly bound?



1. Sphere 1
(when 2 and 3 are NOT there)
2. Sphere 3
(when 1 and 2 ARE there)
3. They will be the same.

The Gauss gun



When sphere 0 is released it is attracted to the magnet and begins to speed up. What do you think will happen when it hits the magnet?



1. Sphere 0 will stick.
Nothing else will happen.
2. Sphere 3 will be kicked off at the same speed that sphere 0 hit with and will slow down to a stop – reversing what 0 did as it approached.
3. Something else will happen. (What?)