



	ΔU _{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.

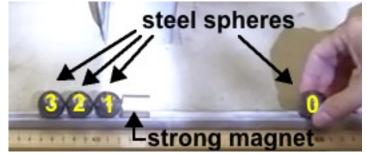


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8	< 0	< 0	0
9	0	0	0

The Gauss gun



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



- 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



strong magn

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?

- 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?)