

# Announcements

To join clicker to class today  
(Clickers with LCD display  
join automatically):

- Turn on the Clicker (the red LED comes on).
- Push “Join” button followed by “20” followed by the “Send” button (switches to flashing green LED if successful).

- Deadline to sign up for e-mail discussion list is today! It is required for the course.
- Some still haven't registered their clickers. If you are not going to please return the coupons.

- First quiz in discussion Today, covers material from last week.
- First exam one week from today.
  - Sample exam, review and study suggestions will be in study-aids section of web site by tomorrow afternoon.

# Review

- Temperature is a measure of the average kinetic energy of the particles in a sample.  
(also conversion between different units)
- Fusion in stars produces elements larger than H and He.
- Fusion stops at  ${}^{56}_{26}\text{Fe}$  because heavier nuclei have lower nuclear binding energy per nucleon.

# Cartoons of Radioactive Decay

1.  $\beta$  decay:  ${}^{59}_{26}\text{Fe} \rightarrow {}^{59}_{27}\text{Co} + {}^0_{-1}\text{e}$  (one neutron converted to proton)
2. positron emission,  $p$  (in nucl)  $\rightarrow n$ (in nucl) +  ${}^0_1\text{e}$  (expelled)
3. electron capture,  $p$  (in nucl) +  ${}^0_{-1}\text{e}$ (falls in)  $\rightarrow n$  (in nucleus)
4. Alpha decay:  ${}^m_p\text{X} \rightarrow {}^4_2\alpha$ (expelled) +  ${}^{m-4}_{p-2}\text{Y}$

# Chang 21.1