Ch. 10 Earthquake Notes

Section 1

Draw a fault, epicenter, focus diagram

Shallow for divergent and transform boundaries

Deep for subduction zones

Body Waves

P waves are compression waves (parallel)--faster--through any material (rock, magma, water, air)

 Primary waves

S waves are transverse waves(perpendicular)--about half speed of p waves--not liquid or gas

 Shear or secondary waves

Surface waves--slower than body waves--travel far distances--cause damage

Love waves--side to side

Rayleigh waves--slower--elliptical pattern (ripples on a pond)

Section 2

Seismograph--machine

Locate epicenters and measure magnitude

10 K around the world

3 machines at station (up and down, N and S, E and W

Seismogram--paper

 Pg 218 discussion

Triangulation diagram pg 219

Magnitude

 Richter 1 = 31x energy--intensity of ground movements

 Moment magnitude--energy released at the source

 Chile 9.5 vs Alaska 9.2

Earthquake engineer

Section 3

Aftershocks, fire, tsunamis,structure damage---how to save lives

Liquefaction--soil loosens--solid bedrock is the best place to build

AS--1000/day

Tsunamis-faster in deep ocean--gets taller when nearing land and slows

1946--Pacific Ocean tsunami warning system (159 died in HI because of AK earthquake)

Safety Tips

 Before--Check house for hazards, have disaster kit

 During--under heavy furniture, open area outside

 After--avoid buildings and wires, get away from gas

New Madrid, MO by the MS River

Prediction--where, when, how severe

 Are emergency services in place?

Seismic Gap-likely place for an earthquake

1999, Izmit, Turkey is on the North Anatolian fault.

NA fault is very similar to the San Andreas fault.

Section 4

S and P waves travel faster through solids.

S don’t go through liquids and gases.

Pg 228 Shadow Zone diagram (refraction)

Moho = Mohorovicic discontinuity--where dense rock of the mantle meets the less dense rock of the crust

Transition zone--middle of mantle--separates upper from denser lower mantle--lower is under greater pressure