

## **GEOL 15 Mid Term II Study Guide**

Seismic Waves: What are the 4 different types of seismic waves? Which is the fastest and which is the 2<sup>nd</sup> fastest? How does a seismometer record the motions from seismic waves? Why do seismic waves travel through the earth in a curved path? What is refraction? How can you determine the location of an earthquake from seismographs? What is a travel time plot?

Moment Tensors: What is a moment tensor or focal mechanism? Can you tell the difference between moment tensors for different earthquakes (strike slip, thrust/reverse, normal)? What kind of moment tensors have we seen in the Gorda plate? What kind of moment tensor would you expect along a subduction zone? The San Andreas fault?

Tsunami: what causes a tsunami? Where do tsunamis occur? What is a travel time map? How can you use a travel time map? Can you calculate the average oceanic basin depth given the tsunami velocity? Where and when was the largest earthquake ever recorded occur? Can you find evidence of past tsunamis? How could you test your hypothesis that the evidence you found was the result of a tsunami in the past? How would you determine when the tsunami happened?

Tectonic Deformation: what happens at a subduction zone in between earthquakes and during earthquakes? Is there sedimentary evidence of this? Where would you go looking for this sedimentary evidence? If you found some sedimentary evidence, how would you test your hypothesis? When was the last subduction zone earthquake on the Cascadia subduction zone? Why do we know this? Where is there evidence for this earthquake? Did this earthquake generate a tsunami? What is the evidence of this? What is an orphan tsunami?