Exercises for GDA - Intro + data

1. There was this great shallow Mw 7.8 event in Nepal in April 2015. You want to explore the differences in arrival times of a station close-by and a far station.
    a. What do you need to find out first to be able to look for data?
    b. Get the data of some phases of a close-by (e.g. < 10°) and a far station (e.g. ~60°). What are the differences, can you already explain them?

2. You think about planning a new seismotectonic project in Mongolia based on earthquake analysis and earthquake mechanisms. What do you need to find out to see if this project would be possible? Do it.

3. GERMAN: You want to know if there have been earthquakes with magnitude M>3.5 within Germany and closest surrounding since 2014. Go figure it out!

4. List the events with magnitude > 6.5 that happened since 1.1.2015, with a depth greater than 500 km. What do the moment tensors/beachballs of these events look like? Can you explain why?

5. You want to use regional recordings of the Mw7.2 event that occurred on 28.06.1992 in California. Find out which seismic stations are located within 1 degree of the event, and were recording during the earthquake. Can you export a list or a map with the stations?

6. You want to perform body wave tomography of southern Finland. Find out if there is an array of stations. How many magnitude > 5.5 earthquakes happened globally during the time the array was deployed?

7. You want to have a look on the magnetic field variations on 24.04.2016 at the station in Fürstenfeldbruck. Get the data.

8. GERMAN: For your studies you need to know the exact coordinates and reference gravity value of the Munich reference point of the German Gravity Network. Find them!

9. You are performing a local study of the Mount Etna region in Sicily. You would like to add data from deep earthquakes. Try the website http://ds.iris.edu/ieb/ (hint, there is already a topic for deep earthquakes in Italy). You need to know what depth range is available in the local area. Can you explain the pattern of seismicity? Why are the earthquakes so deep?