What are the 6 main elements of a GIS ?

1. *Collection: Internet, web services, GPS...*
2. *Maintenance: Quality control, metadata...*
3. *Storage: Files, folders, databases...*
4. *Analysis: Too many to list!*
5. *Output: Maps, tables, reports, pubs...*
6. *Distribution: Websites, web services...*

Which are the 2 most recommended Projected Coordinate Systems to use for data analysis in Humboldt County ?

WGS 84/NAD 83 UTM Zone 10N

NAD 83 State Place CA Zone 1

Which data model uses grid cell values to represent the type and quality of mapped variables?

Raster

Which Boolean operator is represented here?

0	1	0
0	1	0
0	0	0

?

0	1	1
0	1	1
0	1	1

=

0	1	0
0	1	0
0	0	0

AND

Which tool allows you to change classes of a raster file e.g. from 10 old classes to 5 new classes

Reclassify

What is this Raster Calculator conditional operator trying to achieve ?

.... =

$CON((Landuse = \text{``Forest''} \; AND \; Geology = \text{``Alluvial''}) \; OR \; (Landuse = \text{``Grass''} \; AND \; Geology = \text{``Shale''}), \; \text{``Suitable''}, \text{``Unsuitable''})$

Identifying pixels that meet the desired suitability criteria

What are the 4 types of Raster resolution?

Spatial, Spectral, Temporal and Radiometric

The revival and continuous growth of remote sensing is going to provide finer and finer resolution data. What are the two main challenges associated with this?

Storage space and processing speed

Which tool would you use to find the number of counties whose population is above a certain value

Select by attributes

This tool would be the quickest approach to identify parcels that are within a certain radius of an airport?

Select by location

Which combination of tools would you use to find the total number of people living in cities that are within XX miles of a volcano.
Note : The attribute table for cities has population data already

Spatial join and summarize

You want to know how many volcanoes there are within 300 miles of Lake Tahoe, but only those that are not within 50 miles of an interstate. What would be the quickest approach?

Select by location volcanoes within 300 miles….then Select by location volcanoes within 50 miles…..with a "Remove from current selection" type

Think of the question : Which US cities have more Hispanics than African Americans, a median age greater than 40, and a population between 50,000 and 100,000? Your cities attribute table has these fields, amongst others

Pop_total	Pop_hisp	Pop_AA	Med_age

How do you execute the selection?

Select by attributes where ("pop_hisp" > "pop_AA") AND ("med_age" > 40) AND ("Pop_total" > 50 000 AND "Pop_total" < 100 000)

What are the 3 most commonly used datums in the United States ?

NAD27, NAD83, WGS84

If you have a **Digital Elevation Model (DEM)** that has a correctly defined spatial reference system (SRS) but you prefer to work in a different SRS, what is the name of the tool that you should use to change the SRS for the **DEM in ArcMap?** ?

Project Raster

You download a shapefile for which the current Spatial Reference System (SRS) is wrongly defined as WGS 84 UTM Zone 10N. After checking the appropriate documentation, you now know that it should be NAD 83 State Plane California Zone 1. Which tool in ArcMap do you use to have the dataset in the correct SRS??

Define

In the State Plane Coordinate System, how many total zones are there in the contiguous US?

110