

Cartopy: Around the world in 80 ways

Repo: <https://github.com/scitools/cartopy-tutorial>

Glossary

Projection: a transformation from spherical to 2D cartesian coordinates

Ellipsoid: the modelled *shape* of the geoid

Datum: An ellipsoid *and* a spatial reference to locate the center of the ellipsoid with respect to Earth (often relative to a well defined datum, such as WGS84)

Globe: an encapsulation of the datum and/or ellipsoid in Cartopy

Meridian: a line of constant longitude

Parallel: a line of constant latitude

Gridlines / Graticule: a collection of meridians and parallels

Cylindrical (projection): a transformation for spherical to cartesian coordinates using a cylinder as the developable surface. Parallels cross meridians at right angles. The antimeridian is a straight line.

Azimuthal (projection): a transformation for spherical to cartesian coordinates using a plane as the developable surface. Parallels are complete circles. Great circles from central point are straight lines.

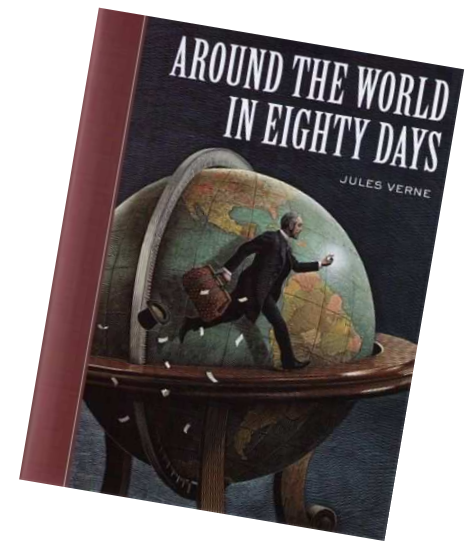
Conic (projection): a transformation for spherical to cartesian coordinates using a cone as the developable surface. Meridians are straight equally-spaced lines, parallels are circular arcs.

Pseudocylindrical (projection): Lines of latitude are parallel straight lines and meridians are curved lines

Conformal: preserving shape

Equal-area: preserving area

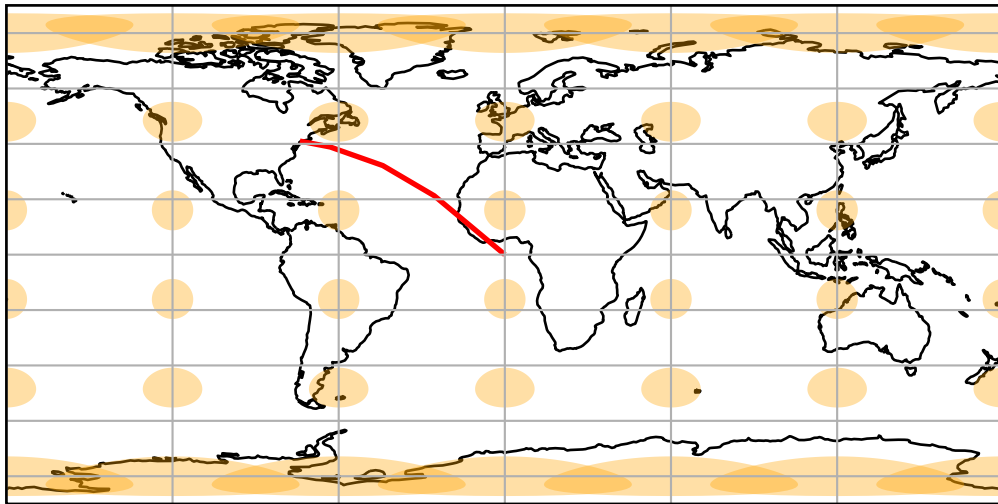
Equidistant: preserving distance from some standard point or line



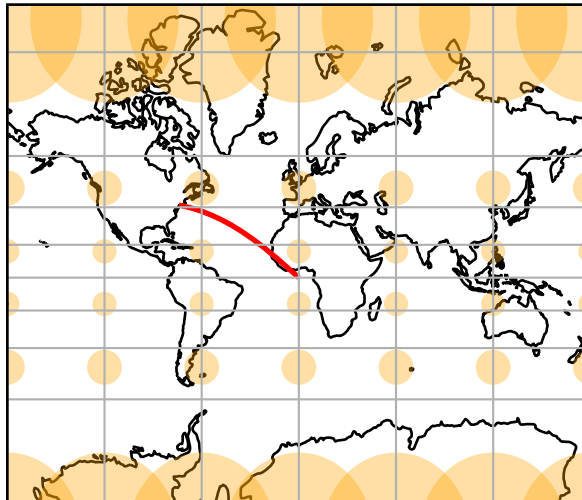
Exercise 1

Map	Conformal	Equal-area	Equidistant (along meridians)	Cylindrical / Azimuthal / Conic / Other?	Projection name
A					
B					
C					
D					
E					
F					
G					
H					

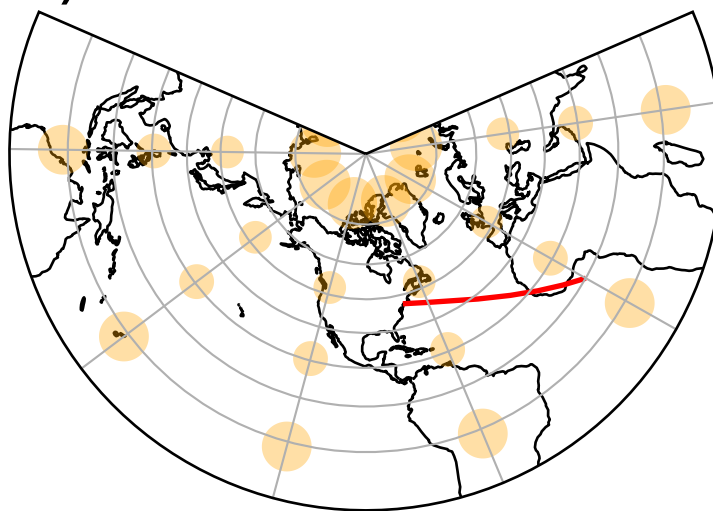
A)



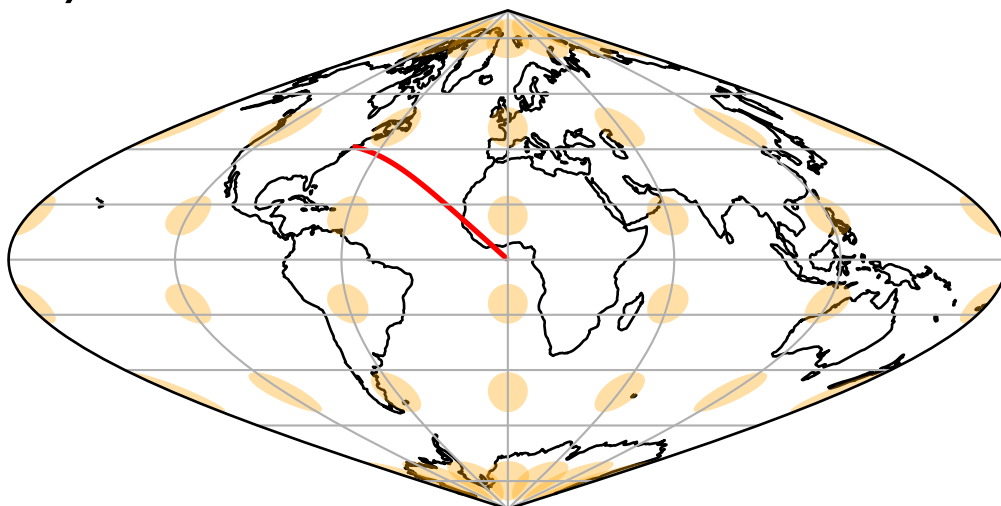
B)



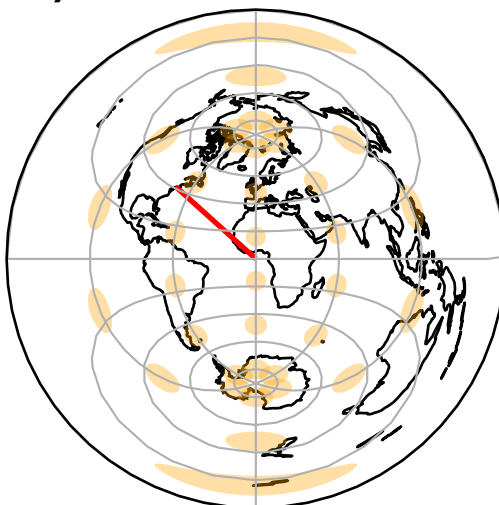
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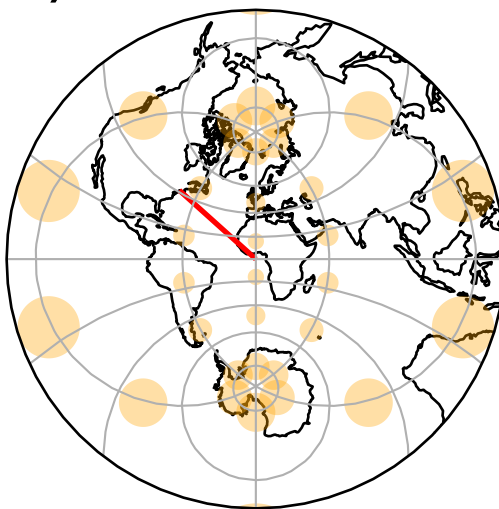
D)



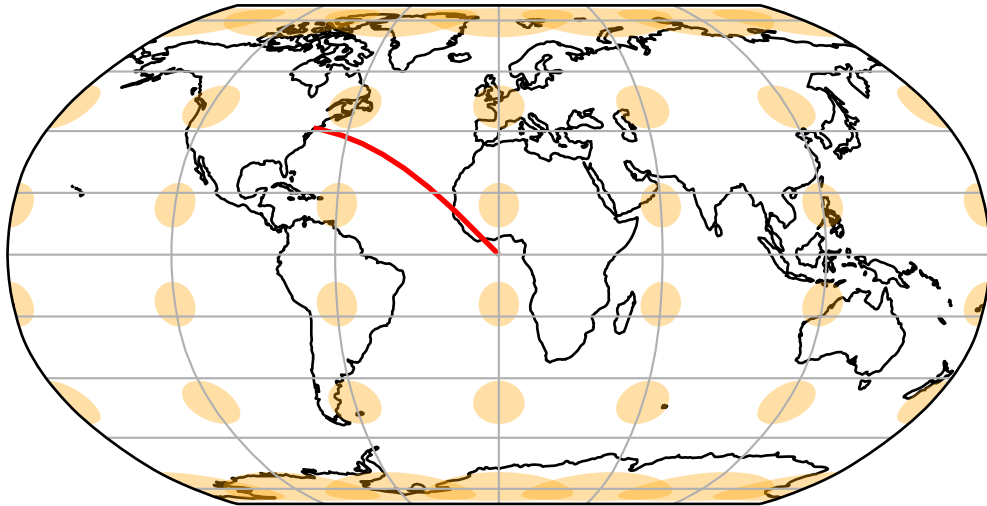
E)



F)



G)



H)

