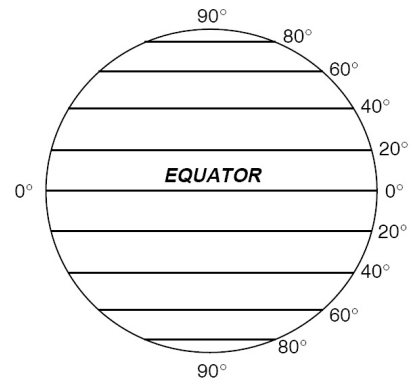


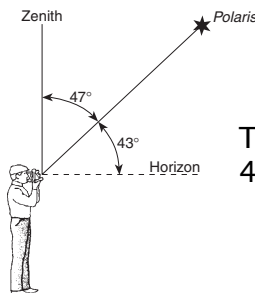
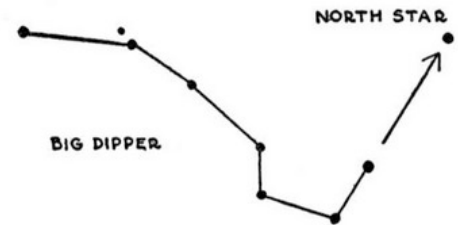
LATITUDE

- › Your distance to the north or south of the equator (0°)
- › These are the horizontal lines ("flat"itude)
- › The highest possible latitude is 90°N (the North Pole) or 90°S (the South Pole)
- › Latitude lines are parallel to one another and are all the same distance apart



TO CALCULATE YOUR LATITUDE...

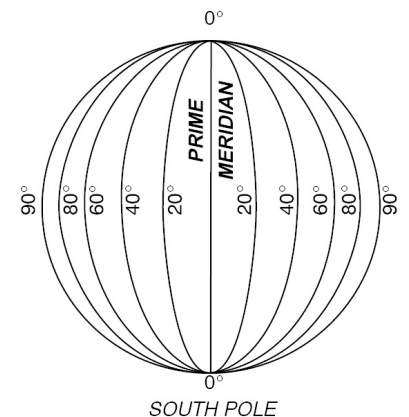
- › Locate the North Star (Polaris) using the Big Dipper
- › Use an astrolabe to determine the altitude of Polaris above the horizon
- › The angle is equal to your latitude
- › This is only true in the northern hemisphere (Polaris is not visible in the southern hemisphere)



The altitude of Polaris for this observer is 43° above the horizon, so his latitude is

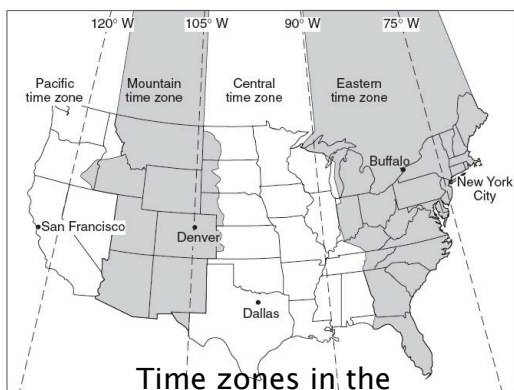
LONGITUDE

- › Your distance to the east or west of the Prime Meridian (0°)
- › These are the vertical lines ("Long"itude)
- › The highest possible longitude is 180° (the International Date Line)
- › Longitude lines are not parallel to one another and the distance between them depends on where on Earth you are
- › Locations to the left of the Prime Meridian are West and to the right are East.



TO CALCULATE YOUR LONGITUDE...

- › The Earth rotates at $15^\circ/\text{hour}$
- › Calculate how many hours there are between your time (usually solar noon, when the sun is at its highest point) and the time at a known location (usually the Prime Meridian)
- › Multiply the number of hours by $15^\circ/\text{hour}$ to give you your numerical longitude
 - › If your time was earlier, you are in the Western hemisphere (time is less, you are west)
 - › If your time was later, you are in the Eastern hemisphere (time does increase, you are east)



REMEMBER...

- › Always write the latitude first
- › All coordinates need a compass direction (unless you are at the equator, prime meridian, or international date line)
- › 1 degree is equal to 60 minutes, use minutes on the New York state map