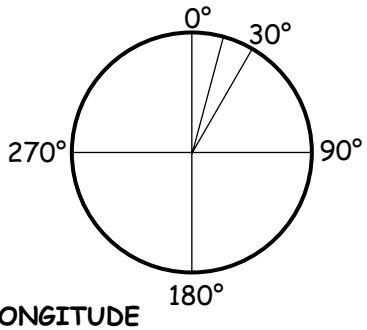
TIME ZONES

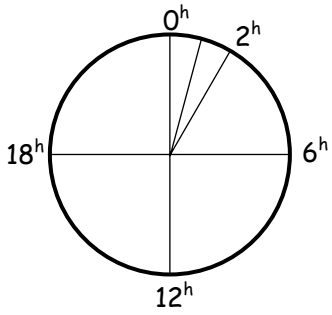
24 hours = 360 degrees

1 hour = _____ degrees

1 degree = _____ minutes

1 TIME ZONE = _____ DEGREES OF LONGITUDE





Starting at the Prime Meridian list the longitudes of the centers of western time zones:

Name	Center Longitude
W. European	0° W
W. Aftrican	
Azores	
Brazilian	
Atlantic	
Eastern	

Name	Center Longitude
Central	
Mountain	
Pacific	
Yukon	135° W
Alaska-Hawaiian	
Nome	165° W

The times of astronomical events is often given in **COORDINATED UNIVERSAL TIME (UT OR UTC)**[1], which is the time on the prime meridian (Greenwhich, or Western European Time). The official time-keeper of the United States is the US Naval Observatory at http://www.usno.navy.mil/. Go to this site and click on

⇨ What Time Is It? (http://tycho.usno.navy.mil/what.html)

⇨ Convert from Universal Time (http://tycho.usno.navy.mil/zones.html)

to find the EST or EDT of the following events in the fall of 2007:

(note that some of the dates may change if an event occurs between midnight UT and Eastern time)

EDT to EST on November 4!

EVENT	UT		LOCAL TIME (EDT OR EST)	
	Date	Time (24 hr)	Date	Time (h:m AM/PM)
Autumnal Equinox	September 23	09:54		
Hunter's Moon	October 26	04:52		
Winter Solstice	December 22	06:10		
Full Moon	December 24	01:15		

[1] Replaced Greenwich Mean Time (GMT) as the World standard for time in 1986. Also known as "Zulu Time," it is based on atomic measurements rather than the Earth's rotation. Greenwich Mean Time (GMT) is still the standard time zone for the Prime Meridian (Zero Longitude). From http://time.greenwich2000.com

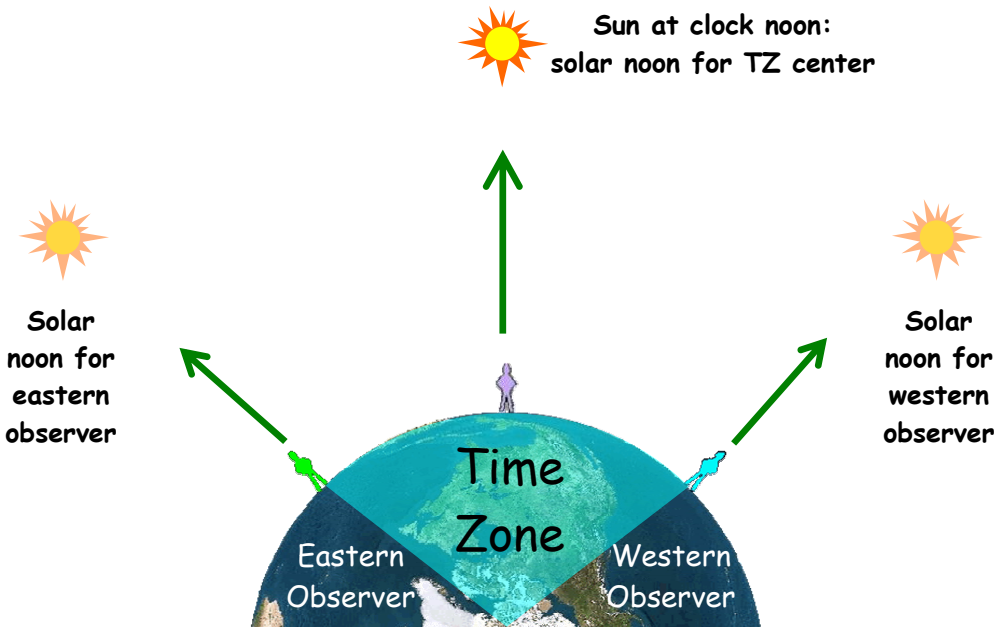
Clock and Solar Noon

The **clock time** is the local clock time. Due to the finite width of the time zones, it does not always fit the solar meaning of time.

SOLAR NOON = SUN ON OBSERVER'S MERIDIAN (TRANSIT)

On the time zone center longitude, clock noon corresponds (roughly) to solar noon. For each degree of longitude of difference between your location and the center meridian, there will be four minutes of difference between your solar noon and civil noon.

EAST OF TZ CENTER: sun crosses meridian **before** civil noon.
WEST OF TZ CENTER: sun crosses meridian **after** civil noon.



Thus solar noon occurs early in the eastern part of the time zone and late in the western part of the time zone. Complete the following table by calculating the difference between the city's longitude and that of the time zone center and using 1 hour = 15° and 1 min = 15′.

City	Longitude				Clock Time of Solar Noon
	City	Time Zone Center	Difference degrees & minutes	E or W	
Canton, NY	75°10′ W	75° W			
Portland, ME	70°15′ W	75° W			
Thunder Bay, Ontario	89°15′ W	75° W			
Lhasa, Tibet (CCT: UTC + 8)	91° E	120° E			

Remember that Longitude is measured west to east in the eastern hemisphere! Use a globe!