

Aim: How do you determine longitude?

Time: Earth Rotates 360° on its axis in 24 hrs.

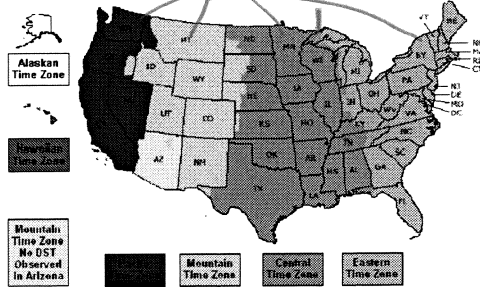
$$\frac{360^\circ}{24\text{hr}} = 15^\circ/\text{hr}$$

Every 15° longitude = 1 hour time difference

Since the Sun rises in the East + sets West

locations to the EAST are later, their day begins First!

How many Time Zones are there in the continental U.S.?

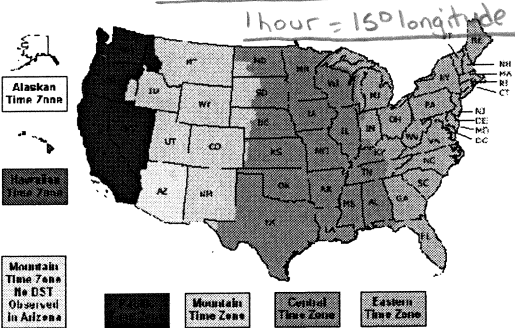


NY-CA
NY is east (later)
CA is west (earlier)
If it is 7pm N what time is it in CA?

Oct 6-9:45 AM

Locations to the East are Later (add time).

Locations to the West are Earlier (subtract time).



Sep 24-1:01 PM

1. If two cities are 15' apart they have a 1 hour time difference.
2. If two cities are 30' apart they have a 2 hour time difference.
3. If there is a 3 hour time difference between cities there are 45 degrees latitude between them.

Sep 24-12:44 PM

★ Time is out of 12 count out loud!

Ex. Your time is 2pm, Prime Meridian time is 10am. What is your longitude?

$$\begin{array}{r} 2\text{pm} \\ -10\text{am} \\ \hline 4\text{hrs later} \end{array} \quad \frac{15^\circ \times 4\text{hr}}{\text{hr}} = 60^\circ \text{E} \quad \text{later}$$

Ex. Your time is 10am, Prime Meridian time is 2pm. What is your longitude?

$$\begin{array}{r} 2\text{pm} \\ -10\text{am} \\ \hline 4\text{hrs earlier} \end{array} \quad 4 \times 15^\circ = 60^\circ \text{West early}$$

Sep 24-12:50 PM

Locations to the East are Later (add time).
Locations to the West are Earlier (subtract time).

Ex. It is 3:00pm at the Prime Meridian and you are located 15°W longitude. What time is it where you are?

$$15^\circ\text{W} = 1\text{hr earlier} \quad 3\text{pm} - 1 = 2\text{pm}$$

Ex. It is 3:00pm at the Prime Meridian and you are located 30°E longitude. What time is it where you are?

$$2\text{hrs later} \quad 3\text{pm} + 2 = 5\text{pm}$$

Practice handout...

Sep 24-12:50 PM

Longitude/Time Zones Practice

1. Your time is 2:00 pm, Prime Meridian time is 10:00 am. What is your longitude?
later east
 $2 - 10 = 4 \text{ hrs} \times \frac{15^\circ}{\text{hr}} = 60^\circ \text{ E}$

2. You time is 9:00 am, Prime Meridian time is 3:00pm. What is your longitude?
earlier west
 $6 \text{ hr} \times \frac{15^\circ}{\text{hr}} = 90^\circ \text{ W}$

3. Your time is 5:00pm, Prime Meridian time is 4:00pm. What is your longitude?
later EAST
 $1 \text{ hr} = 15^\circ \text{ E}$

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6. It is 2:00pm a the Prime Meridian and you are located at 45'E longitude. What time is it where you are?
later
 $\frac{45^\circ}{15^\circ/\text{hr}} = 3 \text{ hr later} + 2 \text{ pm} = 5 \text{ pm}$

7. It is 10:00am at the Prime Meridian and you are located at 60'W longitude. What time is it where you are?
 $\frac{60^\circ}{15^\circ/\text{hr}} = 4 \text{ hr earlier} = 10 - 4 = 6 \text{ am}$

8. It is 10:00am at the Prime Meridian and ou are located at 90'E longitude. What time is it where you are?
 $\frac{90^\circ \text{ E}}{15^\circ/\text{hr}} = 6 \text{ hr later } 10 \text{ am} + 6 \text{ hr} = 4 \text{ pm}$

HW-LatLongTime handout, Lab Due !! castlearning Due Friday morning (TEST FRIDAY)

Sep 24-12:54 PM