

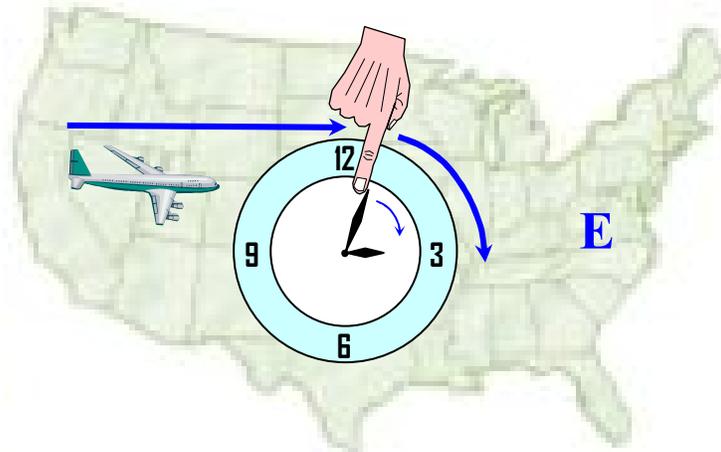
Time Zones

Before the late 1800s, each city set its clocks to 12 noon when the sun was directly overhead.

This made it almost impossible for trains to set time schedules between nearby cities. So worldwide, 24 time zones were created, one for each hour of the day. Every city located within a time zone agreed to set its clocks to the same time, which made travel scheduling easier. However, when crossing time zones, you either gain or lose time, and it's easy to mix up which.

Going East is Least: Lose Time

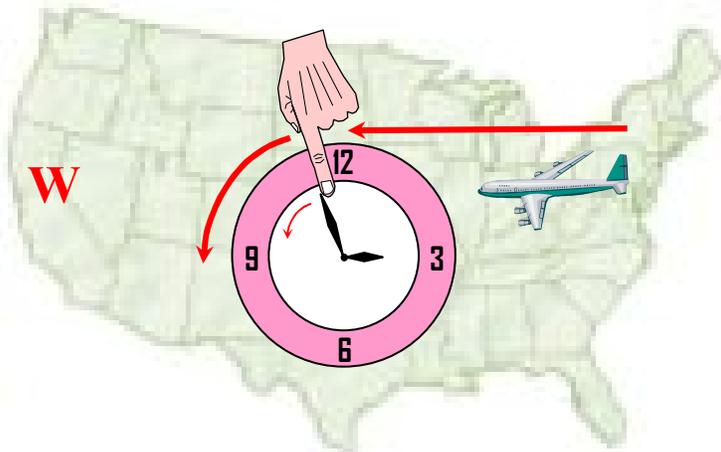
Imagine turning the clock hand *clockwise* in the direction of travel, making it *later* at the destination.



Paradox
The time on the clock *increases*, but that means you've *lost* those hours and don't get to live them.

Going West is Best: Bonus Time

Imagine turning the clock hand *counterclockwise* in the direction of travel, making it *earlier* at the destination.



Paradox
The time on the clock *decreases*, but that means you've *gained* hours and get to *relive* them.



Use the same process when phone calling across time zones so that you don't call too early or too late. Although the U.S. is depicted here, the same rules work anywhere in the world. For actual hours gained or lost, you may need to adjust for daylight savings and other regional time changes.



Your Turn!

Given that it's a 3-hour time difference between the U.S. west and east coasts:

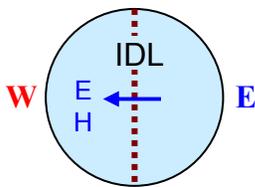
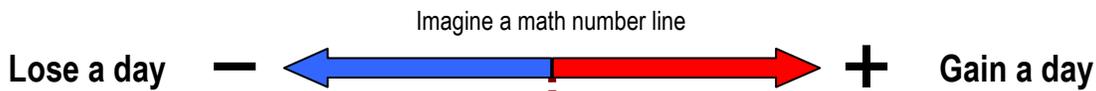
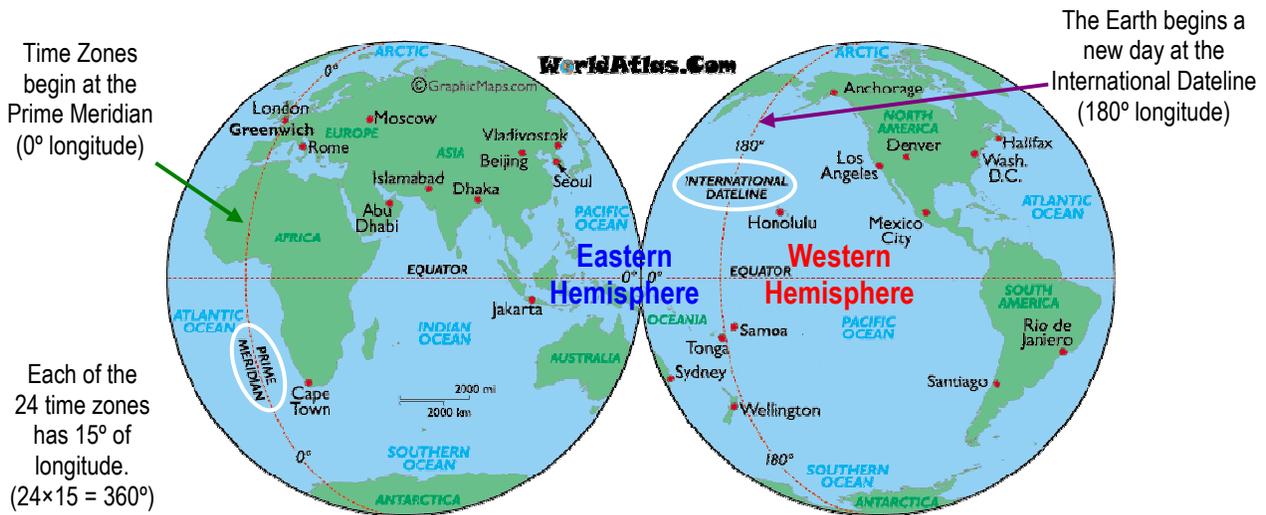
When it's 9 am in California, what time is it in New York? _____.

When it's 9 am in New York, what time is it in California? _____.

Answers: 12 noon, 6 am

International Dateline (IDL)

In the 1500s, when Magellan's ships returned to Spain after circling the globe, their logs were off by one day. In the 1800s, the International Dateline (IDL) was established to resolve circumnavigation problems. When you cross the IDL, you either gain or lose a day, and it's easy to mix up which.



Paradoxes

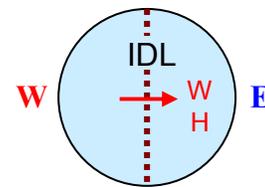
The *Eastern Hemisphere* (EH) is on the *West* side of the IDL.

When crossing the IDL into the EH, the date *increases*, but that means you've *lost* a day and don't get to live it.

I **D** **L**
n *d* *l*
*c **a** **e**
r *a* *e*
*s **s** **s****

(Jan 2) 5 pm | 5 pm (Jan 1)

Within the Time Zone that surrounds the IDL, the time is the same on either side of the IDL split, but the dates are different.



Paradoxes

The *Western Hemisphere* (WH) is on the *East* side of the IDL.

When crossing the IDL into the WH, the date *decreases*, but that means you've *gained* a day and get to relive it.



Your Turn!

If you fly west from the U.S. to China, do you gain or lose a day? _____.

If you fly east from China to the U.S., do you gain or lose a day? _____.

Answers: Lose, Gain

Paradox: The IDL gain/loss direction is *opposite* the Time Zone gain/loss direction.