



Longitude and Time

Longitude can help us determine time. We already know that the earth rotates on its axis once every **24 hours**. In **24 hours** the Earth has turned **360°**. If you divide **360°** by **24 hours** you will discover that the earth rotates **15° every hour**. We start to measure time from the Prime Meridian. When it is **12:00 pm** at the Prime Meridian, it is **1 hour before** noon at **15° W**. Therefore, the time at **15° W** is _____. It is **1 hour after** noon at **15° E**. Therefore, the time at **15° E** is _____. This helps us to find time at other meridians on Earth.

Complete the following:

- (1) The Earth rotates on its axis once every _____ hours.
- (2) We measure time from the _____.
- (3) In one hour the Earth has rotated _____ degrees.
- (4) When it is 12:00 pm at the Prime Meridian, it is _____ at 30°W.
- (5) When it is 12:00 pm at the Prime Meridian, it is _____ at 30°E.
- (6) If it is 6:00 am at 60°W, then it is _____ at 120°E.
- (7) If it is 8:00 pm at 30°E, then it is _____ at 150°W.
- (8) If it is 9:00 am at 45°W, then it is _____ at 135°E.
- (9) If it is 12:00 pm at 15°W, then it is _____ at 165°E.
- (10) If it is 5:00 am at 0°, then it is _____ at 45°E.



Complete the Following (Show your work):

- (1) Local Time = 8:00 am
Universal Time = 11:00 am
Longitude = ?
- (2) Local Time = 4:00 pm
Universal Time = 9:00am
Longitude = ?
- (3) Local Time = 9:00 am
Universal Time = 5:00 am
Longitude = ?
- (4) Local Time = 11:00 am
Universal Time = 4:00 pm
Longitude = ?
- (5) Local Time = 3:00 am
Universal Time = 1:00 am
Longitude = ?
- (6) Local Time = 5:00 pm
Universal Time = ?
Longitude = 75°W
- (7) Local Time = 10:00 am
Universal Time = ?
Longitude = 120°E
- (8) Local Time = 12:00 pm
Universal Time = ?
Longitude = 180°
- (9) Local Time = ?
Universal Time = 4:00 pm
Longitude = 135°W
- (10) Local Time = ?
Universal Time = 3:00 am
Longitude = 60°E
- (11) Local Time = ?
Universal Time = 5:00 pm
Longitude = 67.5°W