

Level: Basic

1. IST stands for Indian Standard Time. It is based on the longitude 82.5° East. [o]
2. If it is 12:00 PM at the Prime Meridian (0°), what is the time at 15° East? _____
3. The earth rotates 360° in 24 hours. How many degrees does it rotate in 1 hour? _____
4. Does time go 'Ahead' or 'Behind' as we move East from London? [^] _____
5. If Rahul is in New Delhi (UTC+5:30), draw a [Sun] if it is day and a [Cloud] if it is night at 2:00 PM.
6. A cricket match starts at 9:00 AM in a city 30° West of the Prime Meridian. What is the UTC time?

7. If it takes 4 minutes for the sun to cross 1° of longitude, how long for 5° ? _____
8. Calculate: If the time difference is 2 hours, how many degrees of longitude were crossed? _____
9. True or False: All places on the same longitude have the same local time. [*] _____
10. If you travel from India to a country in the West, will you turn your watch forward or backward? _____

Level: Intermediate

1. Anila flies from Mumbai (82.5°E) to a city at 102.5°E . What is the time difference? _____
2. The 180° line is called the International Date Line. Tick the symbol if you agree: [#]
3. If IST (UTC+5:30) is 5:30 PM, what is the time in London (UTC+0)? _____
4. A plane leaves Dubai (UTC+4) at 10:00 AM and flies for 3 hours to Mumbai. What is the local arrival time?

5. If it is 6:00 AM at 60°W , what is the time at 30°W ? _____
6. Calculate the longitude of a place where the local time is 1:00 PM when it is 12:00 PM at UTC. _____
7. Sunita is at 45°E and it is 2:00 PM. Her friend is at 45°W . What is the time for her friend? _____
8. If a match costs Rs.500 to view online at 8:00 PM IST, what time should a fan in Japan (UTC+9) log in?

9. Solve: Time at 0° is 10:00 AM. Find the time at 75° East. _____
10. How many time zones of 15° each does the Earth have in total? [o] _____

Level: Advanced

1. A ship crosses the International Date Line from East to West. Does it gain or lose a day? _____
2. Calculate Theta: If $1^\circ = 4$ mins, and Theta = total minutes for 82.5° . Theta = _____
3. India's longitudinal stretch is roughly 30° . Calculate the time lag between Gujarat and Arunachal Pradesh.

4. If it is 10:30 PM on Monday in India, what is the day and time in New York (UTC-5)? _____
5. Find the longitude where local time is 4:00 AM when it is 10:00 AM at 30° East. _____
6. A satellite moves $\pi/2$ radians (90°) across the equator. How many hours of time difference is this?

7. If a flight takes 10 hours from London to New Delhi and departs at 8:00 AM London time, what is the IST arrival? _____
8. A city 'X' is at 120°W and city 'Y' is at 120°E . If it is Noon at X, what is the time at Y? _____
9. If the Earth's rotation speed doubled ($\times 2$), how many minutes would it take to cross 1° ? _____
10. Challenge: If you are at 179°E at 11:50 PM on Dec 31, and you cross 2° East, what is the date?
