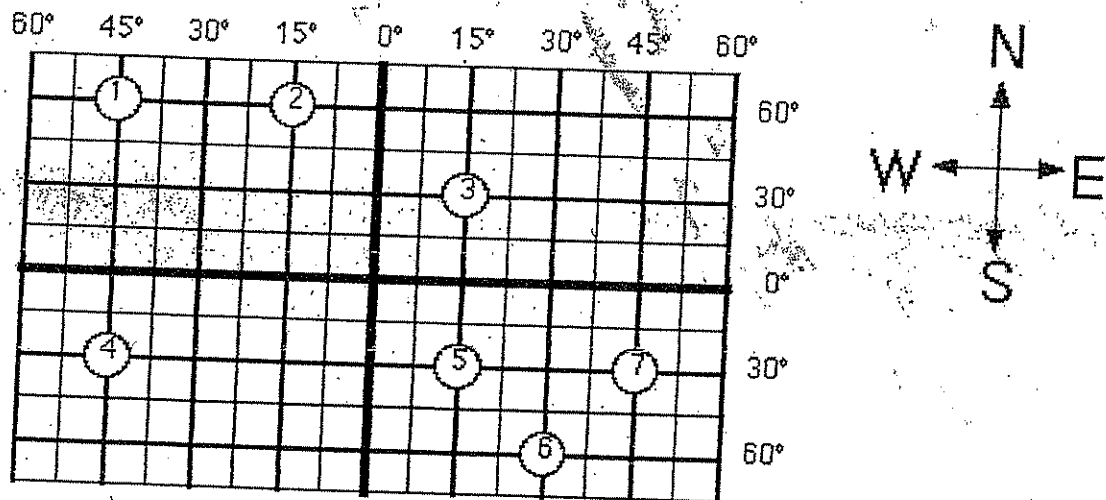


Latitude and Longitude

1. Time:

- A. The world spins 360° in 24 hours.
 1. $360^\circ / 24\text{hrs} = 15^\circ/\text{hr}$
- B. The world has 24 time zones, each 15° of longitude apart.
- C. Greenwich, England is the arbitrary starting point for the time zones ---> **The Prime Meridian (0° longitude).**



1. There is one hour difference for every 15° of longitude.
2. Therefore, there are 2 hours difference between points 1 and 2; 4 hours between points 1 and 3; 5 hours between points 1 and 6; and 6 hours difference between points 1 and 7.
3. There is no time difference between points 1 and 4, or points 3 and 5.
4. Since the world rotates from west to east, time zones to the east are ahead of those time zones to the west.
 1. Thus, if it is 12 noon at the prime meridian, it is 1PM at points 3 and 5; 2PM at point 6; 3 PM at point 7.
(Time is forward to all the places to the east)
 2. And, if it is 12 noon at the prime meridian, it is 11 AM at point 2; and 9 AM at points 1 and 4.
(Time is backward to all the places to the west)

{ East increase; West less }

Latitude and Longitude

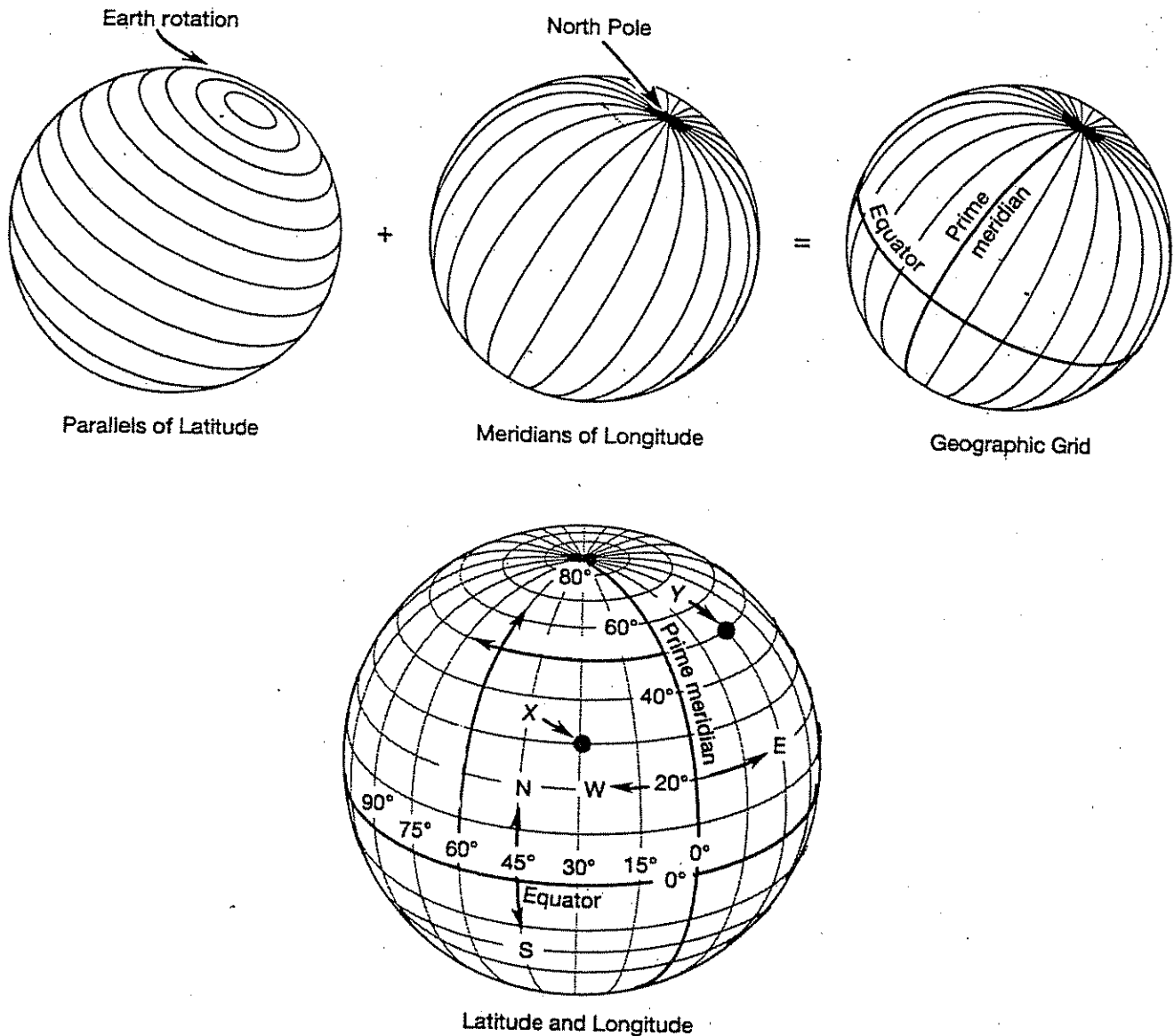


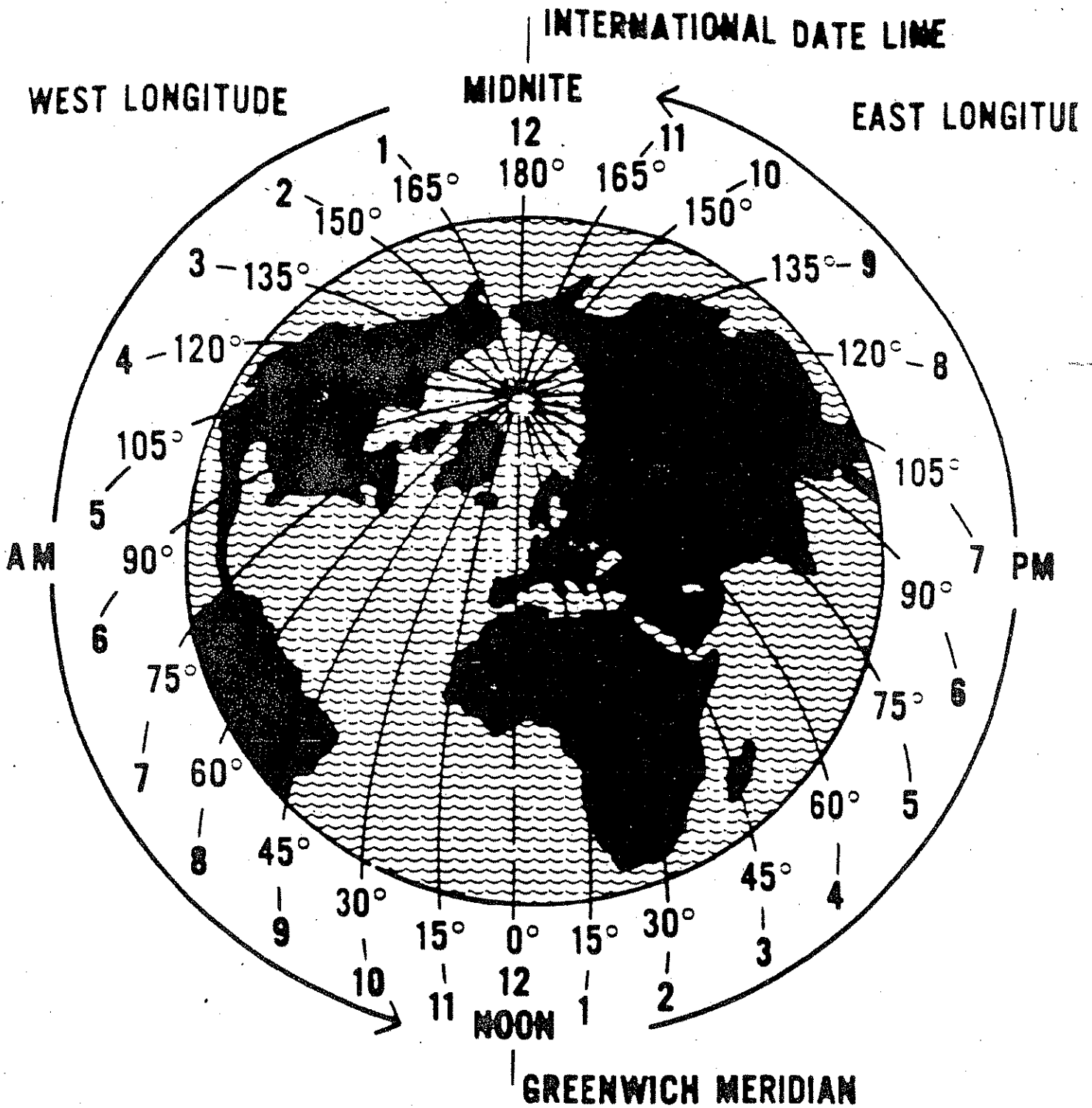
Figure 1 Latitude and Longitude

If the Earth is visualized as being sawed in half through the poles, a circle at right angles to the equator is produced. The result is a circle that connects one pole to the other. Each north-south half of this circle represents a meridian of longitude. When combined in the same model, parallels of latitude and meridians of longitude produce the geographic grid shown in Figure 1.

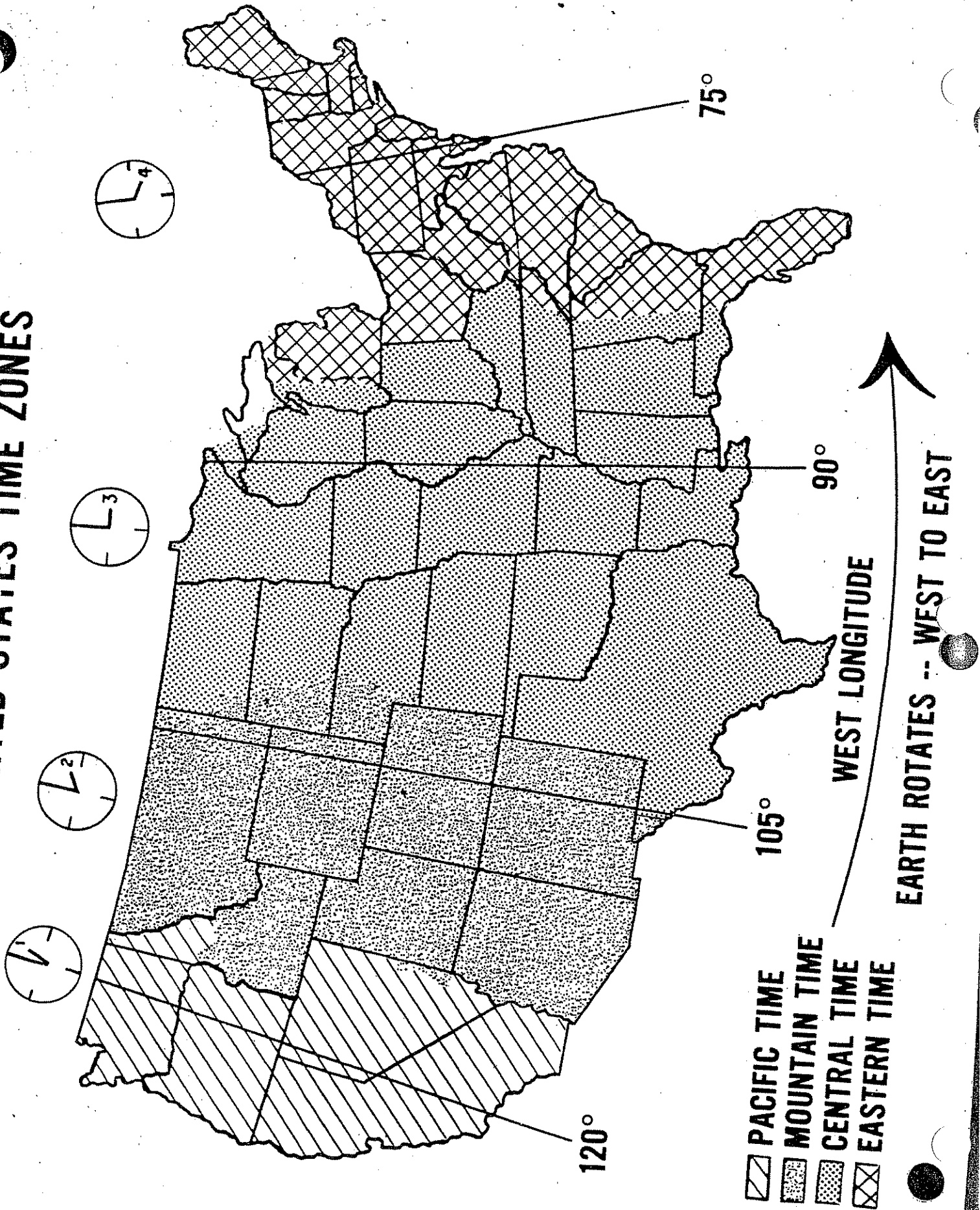
Latitude is the measure of the angular distance of a point north or south of the equator. It is measured in degrees of arc from 0 degrees latitude at the equator to 90 degrees, which is the value for the North or South Pole. Points north of the equator are designated north (N) latitude; points south of the equator are designated south (S) latitude.

Longitude is the measure of the angular distance of a point east or west of the reference meridian known as the prime meridian, or 0 degrees longitude. The prime meridian is also known as the Greenwich meridian as it passes through the old location of the Royal Observatory at Greenwich near London, England.

TIME



UNITED STATES TIME ZONES



- ▧ PACIFIC TIME
- ▨ MOUNTAIN TIME
- ▩ CENTRAL TIME
- ▦ EASTERN TIME

WEST LONGITUDE

EARTH ROTATES -- WEST TO EAST

Name _____

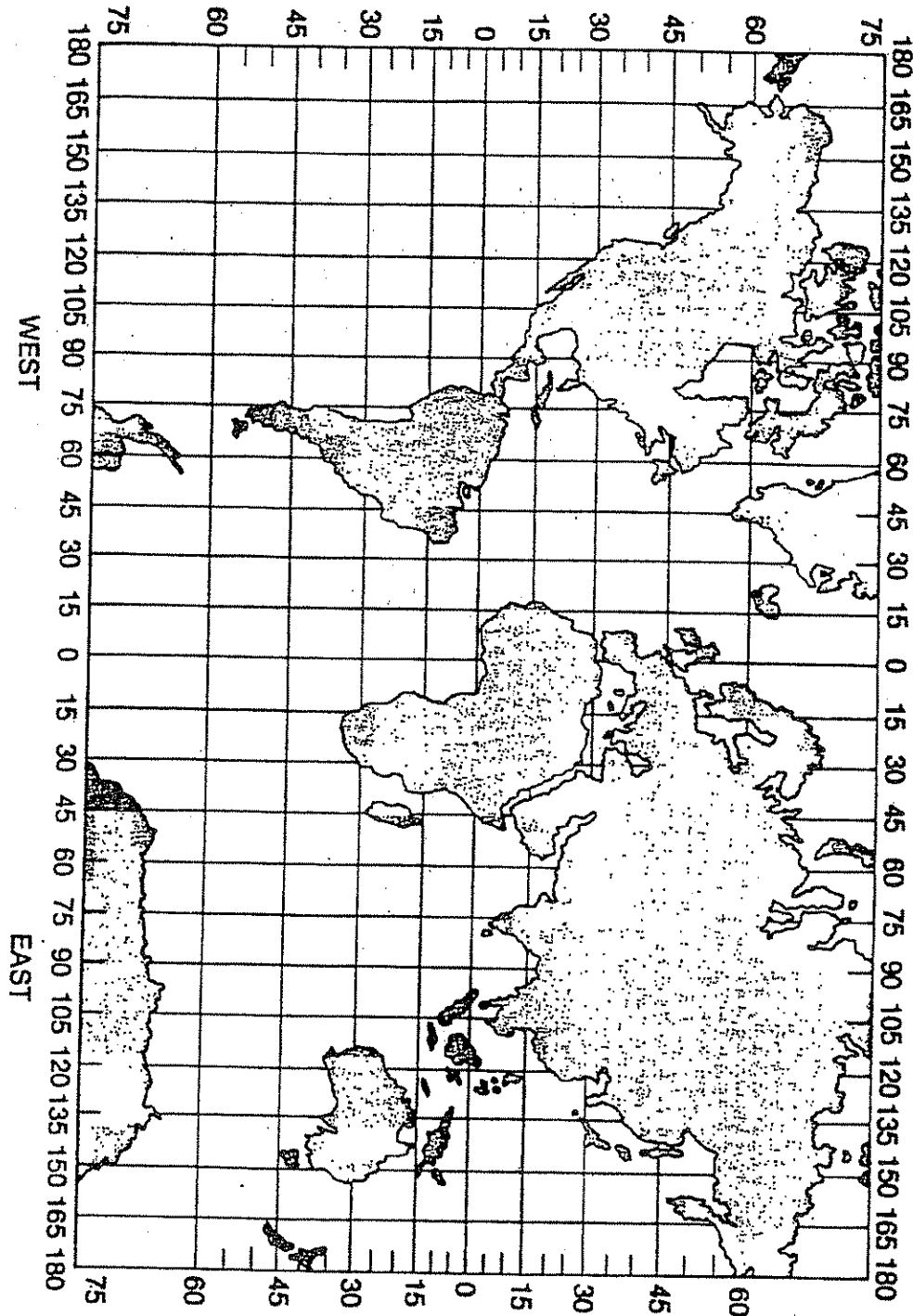
Date _____

Period# _____

Teacher _____

Worksheet on Latitude, Longitude, and Time Zones

Part A: Place a point with the appropriate letter at each of the coordinates given on the map below.



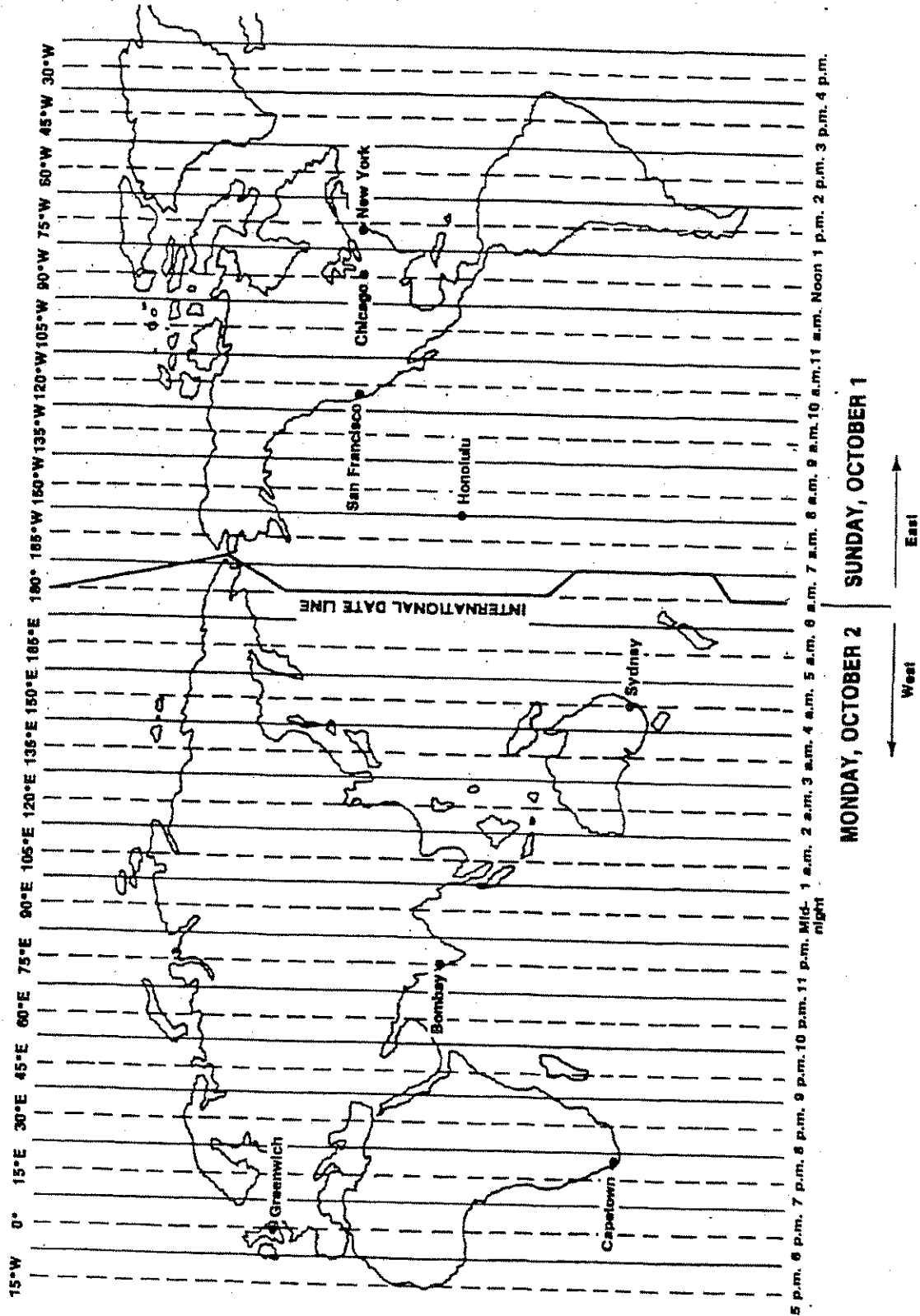
- A: 15° North, 75° West
- B: 45° North, 120° West
- C: 20° South, 45° West

- D: 30° South, 135° East
- E: 60° South, 0°
- F: 10° North, 90° West

- G: 0°, 30° East
- H: 60° North, 90° East
- I: 20° South, 45° East

Part B: If it is 4 p.m. at San Francisco, what time is it at each of the following locations:

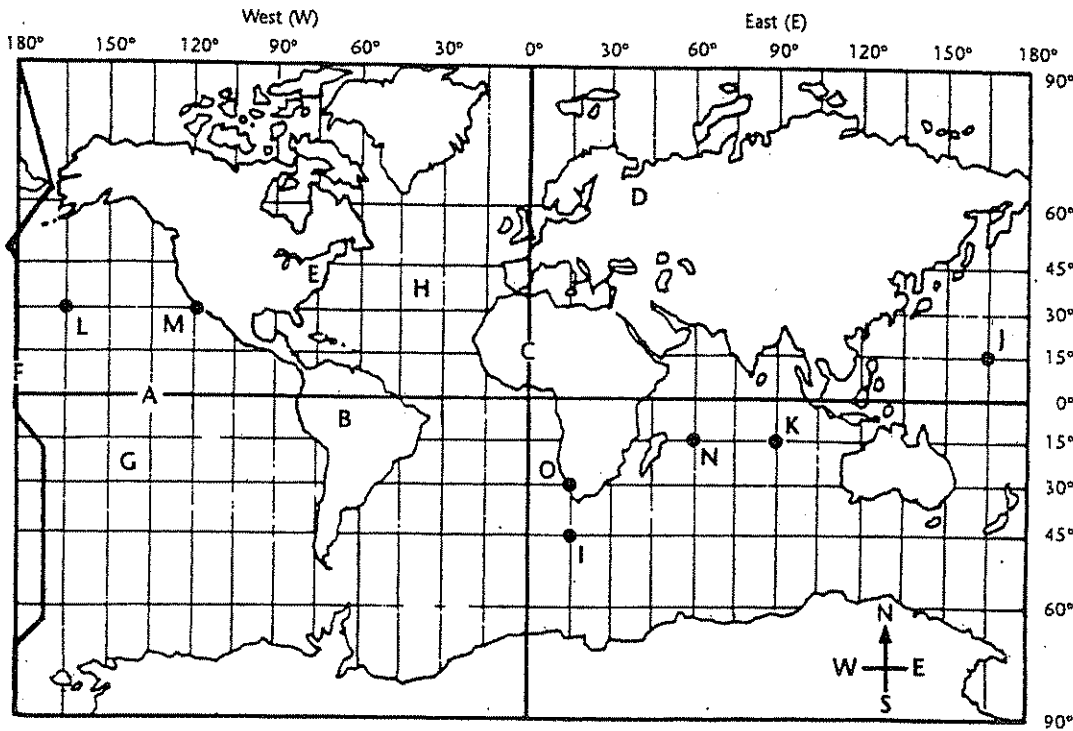
Sydney _____ Bombay _____ Chicago _____
 Capetown _____ Greenwich _____ New York _____



MONDAY, OCTOBER 2 | SUNDAY, OCTOBER 1

Worksheet: Longitude and Latitude

Study the map. Write the letter of each map feature or location on the line provided.



- | | |
|--|---|
| <p>_____ 1. equator</p> <p>_____ 2. prime meridian</p> <p>_____ 3. International Date Line</p> <p>_____ 4. 90° east longitude</p> <p>_____ 5. 15° north latitude</p> | <p>_____ 6. 45° south latitude</p> <p>_____ 7. 165° west longitude</p> <p>_____ 8. 15° south latitude, 60° east longitude</p> <p>_____ 9. 30° north latitude, 120° west longitude</p> <p>_____ 10. 30° south latitude, 15° east longitude</p> |
|--|---|

The map shows longitude in the 15 degree increments that are approximate to the time zones. Use the lines of longitude to estimate the time for the following places.

- _____ 11. You're at point B on the map. It's 7:00 A.M. What time would it be at point E?
- _____ 12. You're at point H on the map. It's 5:00 P.M. What time would it be at point G?
- _____ 13. You're at point H on the map. It's 7:00 P.M. What time would it be at point D?
- _____ 14. You're at point J and you travel eastward to point L. Do you lose or gain a day?

