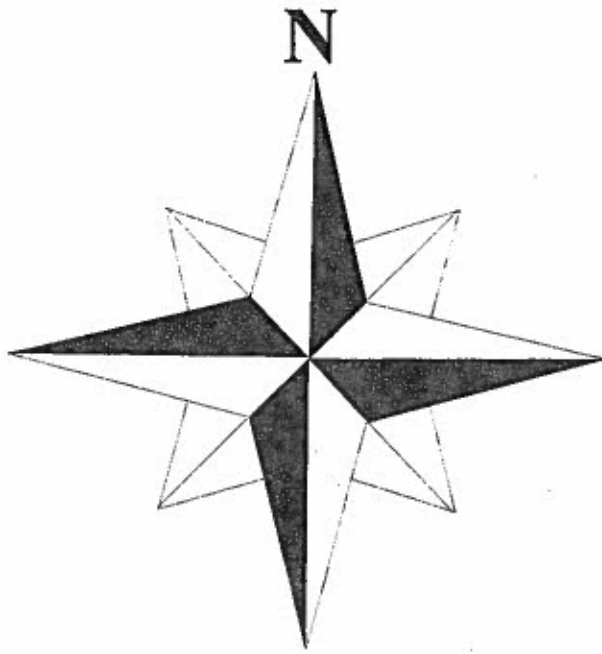


# Earth Dimensions

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## Unit 1

Observation:

Inference:

**II. Shape of Earth**

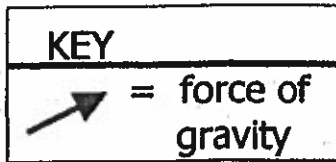
- A. \_\_\_\_\_ - \_\_\_\_\_
- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. Diagram of an \_\_\_\_\_

NOT  
TO  
SCALE

- 4. Earth's equatorial circumference is \_\_\_\_\_  
than its polar circumference.
  - a. Equatorial circumference - \_\_\_\_\_
  - b. Polar circumference - \_\_\_\_\_

B. Causes of Earth's Shape

1. \_\_\_\_\_ - an inward pulling force. This force pulls inward equally in all directions and causes earth to be \_\_\_\_\_.



2. \_\_\_\_\_ - an apparent outward force caused by the spinning (or rotating) of earth on its axis. This force causes earth to \_\_\_\_\_.

a. The faster the rotational speed, the \_\_\_\_\_ the centrifugal force.

b. (1) How long does it take each location to make one complete rotation?

X \_\_\_\_\_

Y \_\_\_\_\_

(2) Which location, X or Y, travels a greater distance to make one complete rotation?

(3) At which location, X or Y, is the rotational speed greater?

(4) At which location, X or Y, is centrifugal force greater?

c. Therefore, the greater centrifugal force causes earth to bulge at the \_\_\_\_\_.



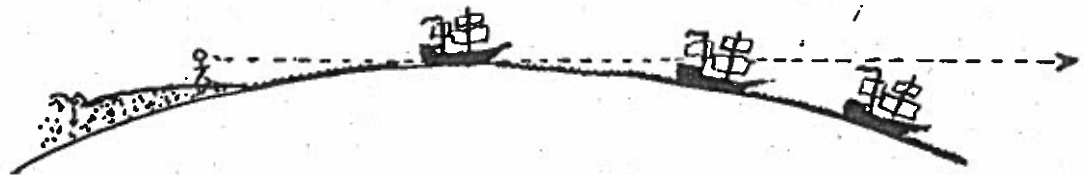
### C. Evidence of Earth's Shape

1. Photographs from space reveal that Earth is

\_\_\_\_\_.



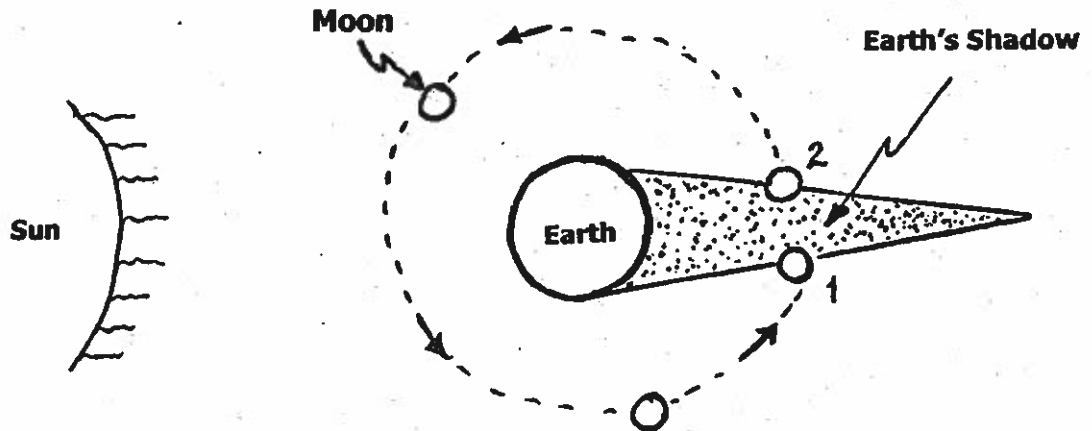
2. Observations of ships on the horizon



The gradual "appearance" or "disappearance" of a ship over the horizon is evidence that earth's surface is \_\_\_\_\_.

3. Observations of an Eclipse of the Moon (as viewed from Earth)

a. As viewed from space:



As the moon orbits Earth, and travels from position 1 to position 2, it passes through \_\_\_\_\_.

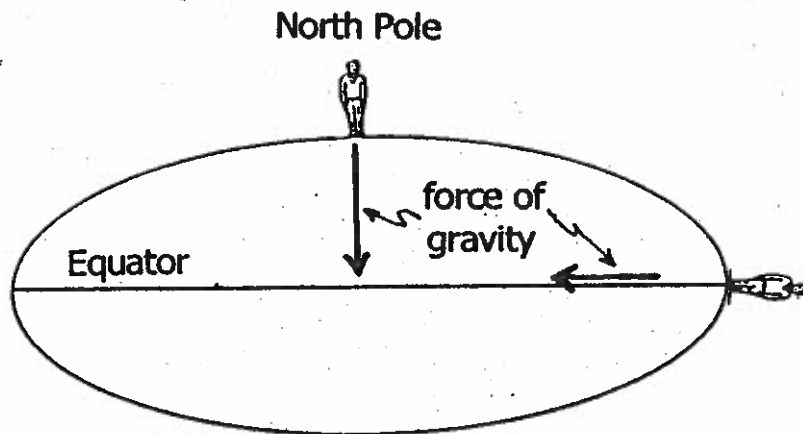
b. As viewed from Earth:



c. Earth's shadow on the moon (full moon) during a lunar eclipse provides evidence that Earth is \_\_\_\_\_.

4. Measurement of Gravity

a.



b. The shorter the distance between two objects, the greater the gravitational force. Therefore a person or object that is closer to the center of Earth (the center of gravity) would weigh more than when the person or object is farther from the center of gravity.

c. (1) If Earth is an "oblate spheroid", where on the surface of Earth would a person be closer to the center of Earth?

\_\_\_\_\_

(2) Where on the surface of Earth would a person weigh the most?

d. Under what circumstance would a person weigh the same everywhere on Earth?

\_\_\_\_\_

\_\_\_\_\_

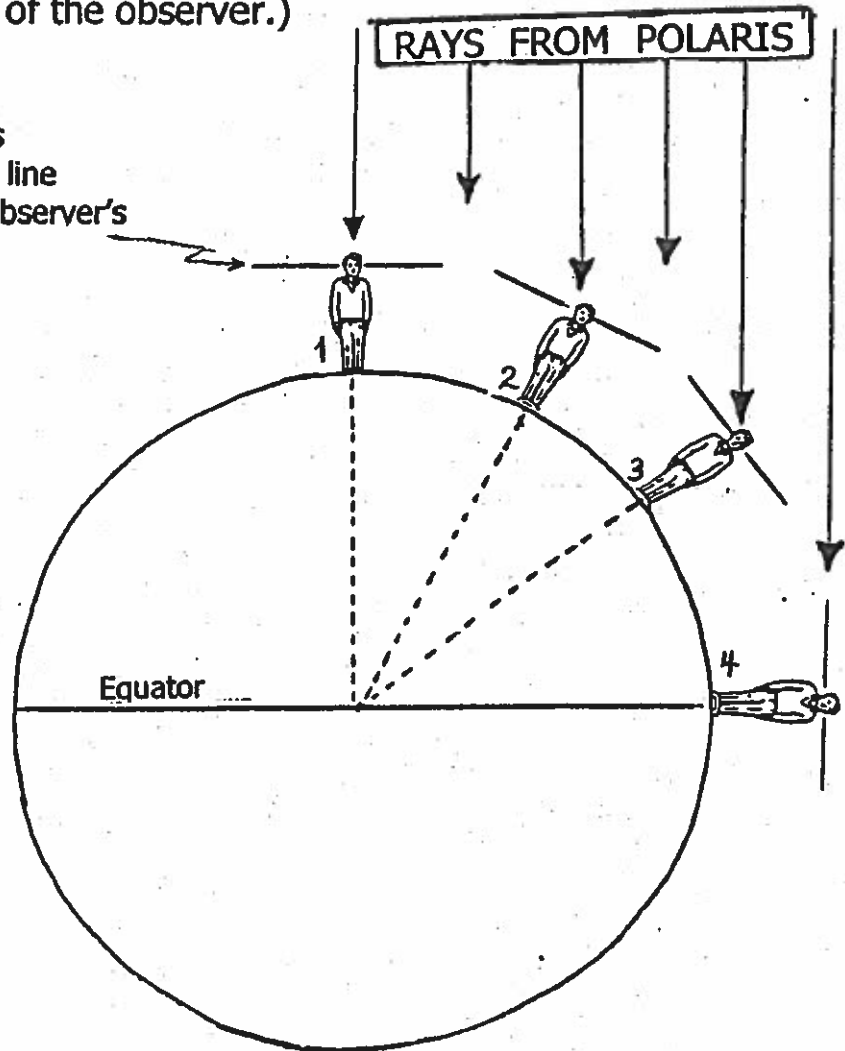
5. Observation of the North Star, Polaris

a. The altitude of Polaris changes as an observer moves north or south (in the Northern Hemisphere); this is because Earth is \_\_\_\_\_, and its surface is \_\_\_\_\_.

(Altitude is the height, measured in degrees that a heavenly body is above the horizon of the observer.)

b.

The horizon is shown by the line through the observer's line of vision.



OBSERVER	LATITUDE	ALTITUDE OF POLARIS
1		
2		
3		
4		

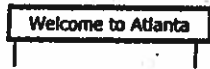
c.



Location 1 = \_\_\_\_\_ ° N Lat.



N \_\_\_\_\_ S  
Location 2 = \_\_\_\_\_ ° N Lat.



N \_\_\_\_\_ S  
Location 3 = \_\_\_\_\_ ° N Lat.



N \_\_\_\_\_ S  
Location 4 = \_\_\_\_\_ ° N Lat.

d. Summary : \_\_\_\_\_  
\_\_\_\_\_

e. Locating the North Star



### IV. Latitude and Longitude

A. Latitude - \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1. Parallels - \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

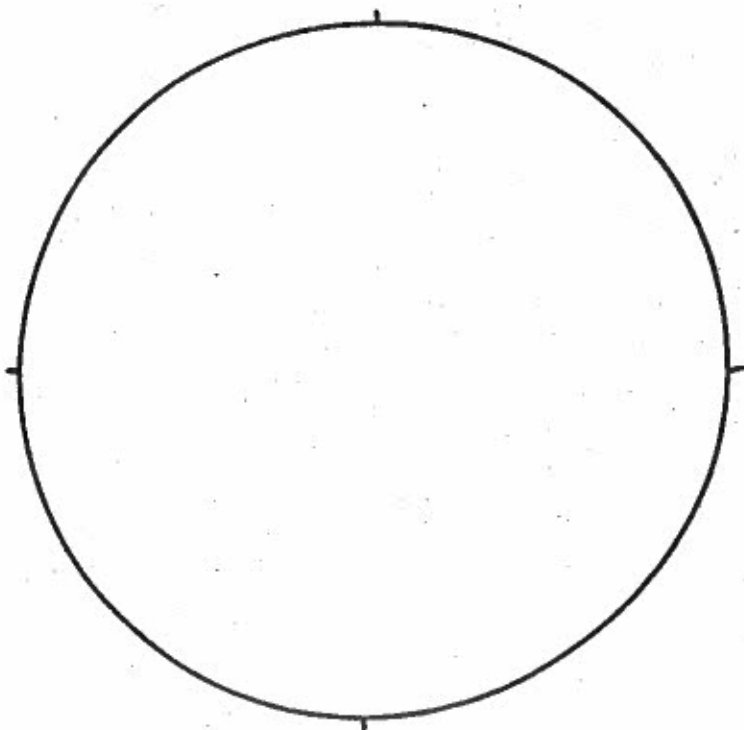
2. Equator - \_\_\_\_\_

\_\_\_\_\_

3. North/South Pole - \_\_\_\_\_

\_\_\_\_\_

4.





B. Longitude - \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1. Meridians - \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

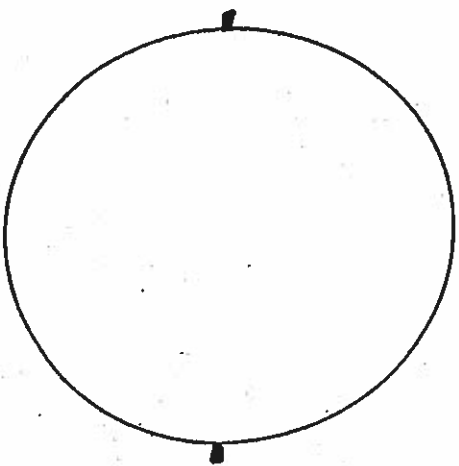
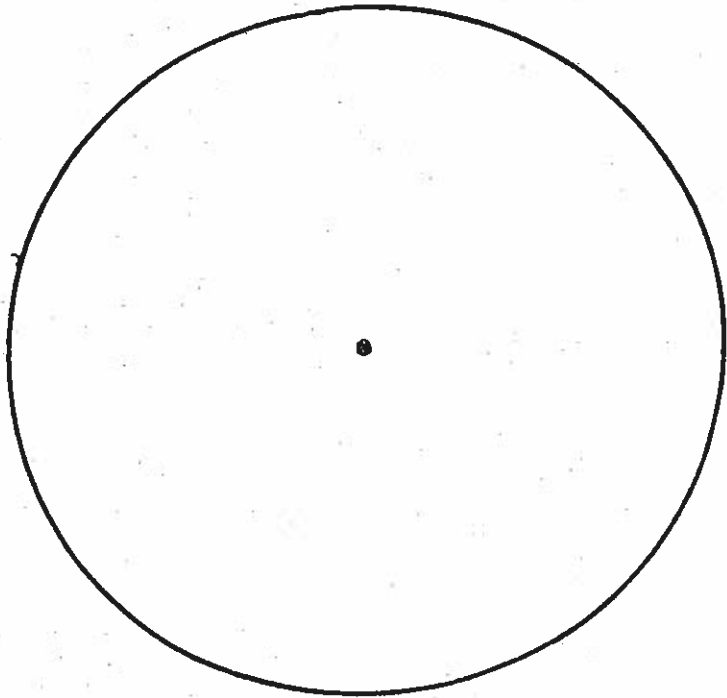
2. Prime Meridian - \_\_\_\_\_

\_\_\_\_\_

3. International Date Line - \_\_\_\_\_

\_\_\_\_\_

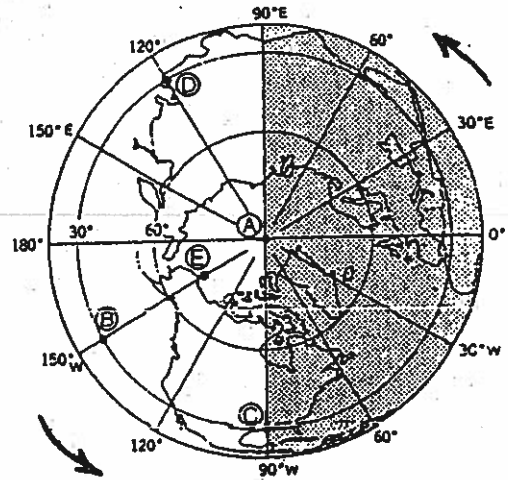
Polar  
View



Side/Equatorial  
View

D. Earth's Time Zones

1. As Earth rotates on its axis, half of earth is facing the sun and is experiencing daylight; the other half is in darkness and is experiencing night.
2. When the sun is directly over a certain meridian, it is 12 noon at any location at or near that meridian.



3. Think:

Earth is a sphere /degrees in a circle = \_\_\_\_\_ =  
 Time / Hours to make one complete rotation = \_\_\_\_\_ =

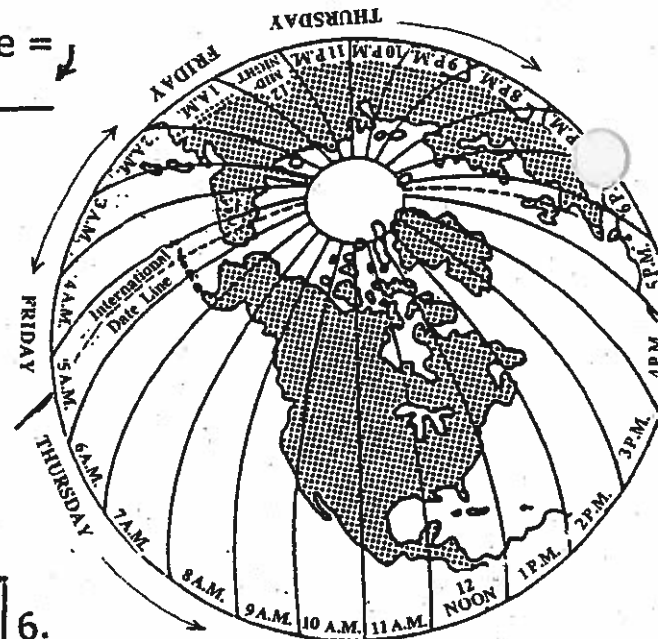
Earth's  
Rotational  
Speed

4. a. Number of time zones on Earth = \_\_\_\_\_

b. Approximate width of each time zone = \_\_\_\_\_

5. a. If it is Wednesday, and you cross the International Date Line going west, it would then be \_\_\_\_\_

b. It is Tuesday, and you cross the International Date Line while traveling east, it would then be \_\_\_\_\_



6. a. How many time zones are there in the continental U.S.?  
 \_\_\_\_\_

b. Is it earlier or later in California that New York?  
 \_\_\_\_\_

c. If it is 8:00 EST, what time is it in PST?  
 \_\_\_\_\_

d. It is 6:00 MST, what time is it in EST?  
 \_\_\_\_\_

