

# THE EARTH'S ROTATION

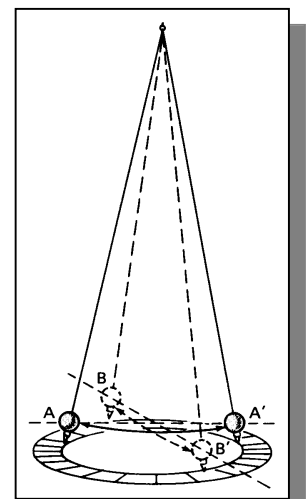
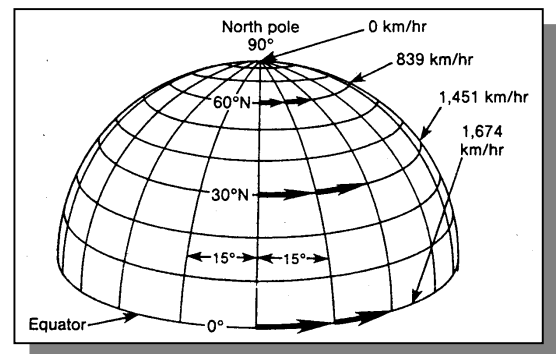
Name \_\_\_\_\_

Directions: define the following terms.

solar noon -	Foucault (Foo Ko) Pendulum -	Coriolis Effect -
apparent solar day -	sidereal day -	mean solar day -

Directions: give the best answer to the following questions.

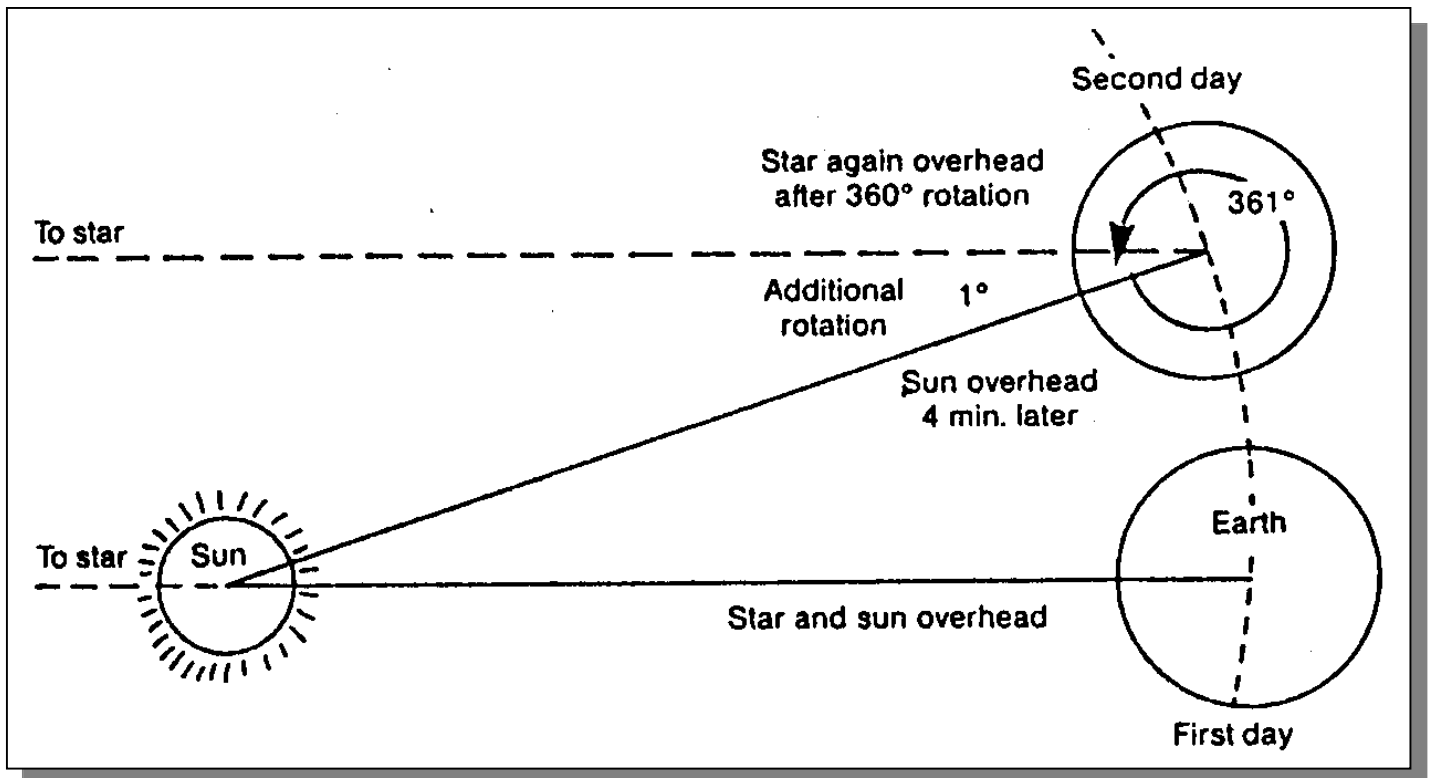
- As viewed from the North Pole, Earth rotates in a \_\_\_\_\_ direction, or from \_\_\_\_\_ to \_\_\_\_\_, at a rate of \_\_\_\_\_<sup>o</sup>/hr.
- The Earth is rotating at an angular velocity of \_\_\_\_\_ at the Equator. Here in Ballston Spa, we're spinning FASTER / SLOWER.
- If you drop a stone from a moving car, does it A) fall right where you drop it, or does it B) continue moving in the direction of the moving car before hitting the ground? \_\_\_\_
- In the same way, a missile shot north from the Equator is rotating EAST / WEST with the Earth as it's shot, so it deflects to the \_\_\_\_\_ relative to the surface of the Earth (which is rotating more slowly at higher latitudes). This deflection of objects moving over the surface (including winds and ocean currents) is called the \_\_\_\_\_.
- THE VERY BEST EVIDENCE we have of the Earth's rotation is the \_\_\_\_\_ pendulum. In the Northern Hemisphere, such a pendulum appears to gradually change its direction of swing in a clockwise direction, making a complete circle in 24 hours (from A to B in the diagram at right). The pendulum is not actually rotating, but \_\_\_\_\_ is rotating beneath it. You can see huge Foucault Pendulums hanging from the ceiling in many museums. It's eerie knowing that the building is actually rotating beneath the pendulum!



6. Three other evidences of the Earth's rotation include \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.

## TIME & EARTH MOTIONS

1. The time it takes Earth to revolve around the Sun is \_\_\_\_\_ days, otherwise known as one \_\_\_\_\_.
2. The time it takes Earth to rotate once is \_\_\_\_\_ hours, \_\_\_\_\_ minutes and \_\_\_\_\_ seconds, or one \_\_\_\_\_ day.



3. However, this diagram shows that after the Earth has rotated  $360^{\circ}$ , it is in a different angular position with regard to the Sun. Because Earth has also *revolved* approximately one degree around the Sun, it must now rotate an additional one degree to complete one \_\_\_\_\_ day, which is \_\_\_\_\_ hours long.
4. The Earth's orbital speed **CHANGES / STAYS THE SAME** over the course of its yearly revolution.
5. The length of a solar day **CHANGES / STAYS THE SAME** over the course of a year, because \_\_\_\_\_
6. The time on our clocks, the "24 hour day," is actually the \_\_\_\_\_ day.