

Ideas 1a

Geocentric and Heliocentric Theories

Part 1

Directions: Read each of the following phrases carefully and decide which solar-system theory it best describes. Then place the number of the phrase under the proper theory.

- | | |
|---|---|
| 1. View held today | 12. Sun, Mercury, Venus, Earth, . . . |
| 2. Earth, moon, Mercury, Venus, . . . | 13. Backward loops of the planets as a result of the earth's passing by |
| 3. Stationary earth | 14. Very accurate model |
| 4. Very simple model | 15. Doctrine incorporated by the Roman Catholic church during the Middle Ages |
| 5. Very inaccurate model | 16. Spinning earth |
| 6. Atmosphere dragged along by the earth | 17. Sun at the center |
| 7. Earth at the center | 18. Planets that move around in small circles called <i>epicycles</i> |
| 8. Crystal sphere around the earth called the <i>deferent</i> | 19. Theory taught by Galileo and Copernicus |
| 9. Theory formulated during the Renaissance | 20. Theory that is also named after its promoter, Ptolemy |
| 10. Very complex model | |
| 11. Theory formulated during ancient times (B.C.) | |

Geocentric

Heliocentric

Part 2

Directions: In the spaces below, define the terms *geocentric* and *heliocentric*

Geocentric _____

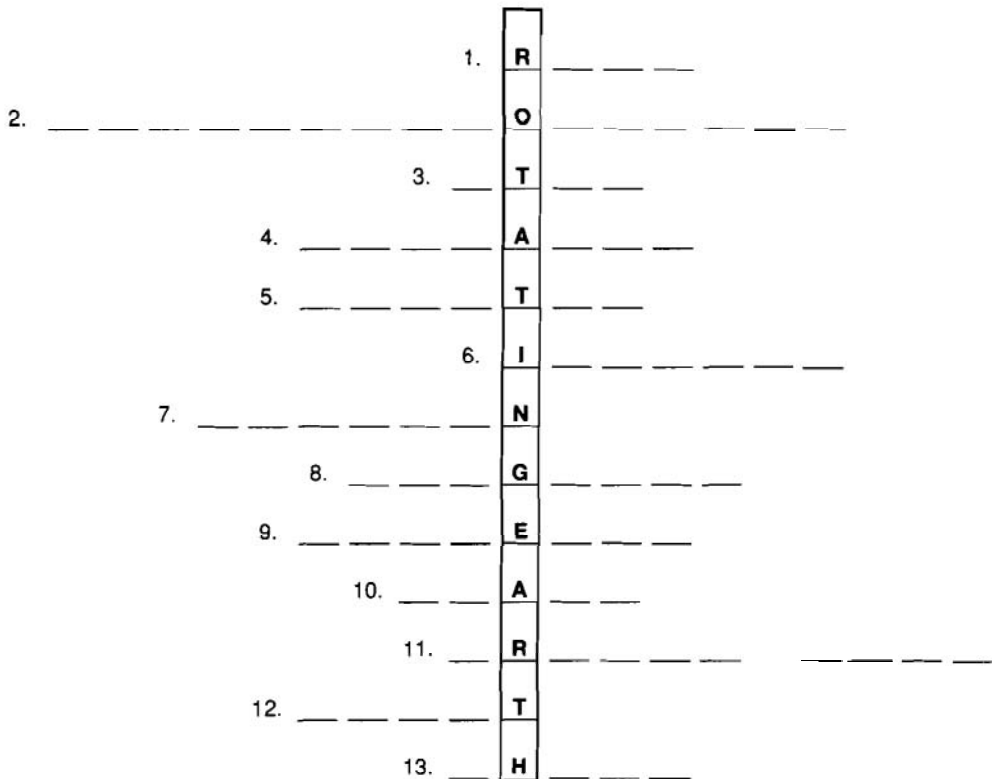
Heliocentric _____

Ideas 1b

The Earth's Rotation

Directions: Use the following statements to choose the right words for the blanks in the puzzle. All of the words pertain to the rotation of the earth.

1. The sun, moon, planets, and stars all (1) in the east.
2. In the Northern Hemisphere, stars appear to move (2) around the North (3).
3. The (4) pendulum was constructed by a French physicist in 1851.
4. The earth's surface is moving faster at the (5) than at the poles.
5. (6) is the tendency of moving matter to keep moving in the same direction.
6. If you positioned a Foucault pendulum over the North Pole, you would be able to see the earth turn at a rate of (7) degrees per hour.
7. The (8) wind (9) occur because the rotating earth deflects the wind.
8. As the earth rotates, it (10) the atmosphere with it.
9. When (11) such as bullets, cannon balls, or missiles take off from the spinning earth, allowances must be made for deflection, or they may miss their target.
10. If the earth did not rotate, we would have half a year of continuous daylight and half of continuous (12).
11. The (13) of the earth is slightly flat at the poles and bulging at the equator.



Scientists Who Helped Discover the Earth's Motions

Directions: Match each man below with the phrases that best describe him. Place the first letter of each name in the proper blank.

Aquinas
Copernicus

Foucault
Galileo

Kepler
Newton

Ptolemy
Tycho

- _____ 1. Was tried by the Catholic Inquisition for promoting the heliocentric theory
- _____ 2. Polish astronomer who formulated the heliocentric theory
- _____ 3. Danish nobleman considered to be one of the most accurate astronomical observers
- _____ 4. Proved mathematically that the orbits of the planets are elliptical
- _____ 5. Played a large role in modifying and improving the heliocentric theory through his **careful** studies of Tycho's observations
- _____ 6. First to see the rings of Saturn
- _____ 7. Wrote a book called *New Astronomy*
- _____ 8. **Author** of *The Revolutions*
- _____ 9. English scientist who formulated the law of gravity
- _____ 10. French physicist who constructed a pendulum that helped to prove the earth's rotation
- _____ 11. Italian philosopher who claimed he could harmonize the science and thinking of the ancients with Christianity
- _____ 12. First to see Jupiter's largest moons
- _____ 13. German astronomer who formulated the laws of planetary motion
- _____ 14. Was inspired by an apple falling from a tree
- _____ 15. Hung a 200-foot pendulum inside the Pantheon
- _____ 16. Greek philosopher and astronomer who lived in the second century A.D. and attempted to improve the earth-centered theory of the solar system

Ideas Id

The Seasons

Directions: Fill in the following chart with the correct information. A sample answer for each category has already been given.

Season in the Northern Hemisphere			Spring	
Scientific Name		Autumnal equinox		
Date (approx.)	December 21			
Length of Days and Nights in Northern Hemisphere		Equal days and nights		
Location of Sun's Direct Rays			Equator	
Position of the Sun in the Sky for the Northern Hemisphere				Highest