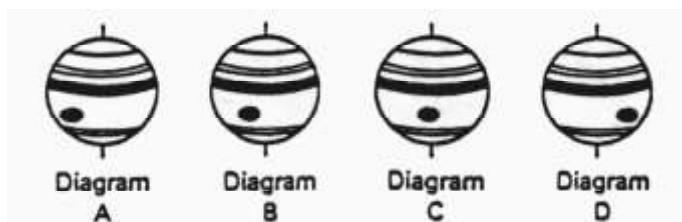


Rotation and Revolution

1. The time required for one Earth rotation is about
 - (1) one hour
 - (2) one day
 - (3) one month
 - (4) one year

2. The planet Jupiter was viewed from Earth for several hours. The diagrams below represent the appearance of Jupiter at four different times.



- The best inference that can be made based on the diagrams is that this planet is
- (1) tilted on its axis
 - (2) changing seasons
 - (3) revolving
 - (4) rotating
-
3. The Earth rotates on its axis at a rate of approximately
 - (1) 1 degree per hour
 - (2) 15 degrees per hour
 - (3) $23\frac{1}{2}$ degrees per hours
 - (4) 360 degrees per hour

 4. If the Earth's rate of rotation decreased, there would be an increase in
 - (1) length of the seasons
 - (2) number of observable stars at night
 - (3) Sun's angle of insolation at noon
 - (4) length of time for one Earth day

 5. Why do stars appear to move through the night sky at the rate of 15° per hour?
 - (1) The Earth actually moves around the Sun at a rate of 15° per hour.
 - (2) The stars actually move around the center of the galaxy at a rate of 15° per hour.
 - (3) The Earth actually rotates at a rate of 15° per hour.
 - (4) The stars actually revolve around the Earth at a rate of 15° per hour.

 6. Which statement best explains the apparent daily motion of the Sun and other stars?
 - (1) The Earth's orbit is an ellipse.
 - (2) The Earth has a shape of an oblate spheroid.
 - (3) The Earth rotates on its axis.
 - (4) The Earth revolves around the Sun.

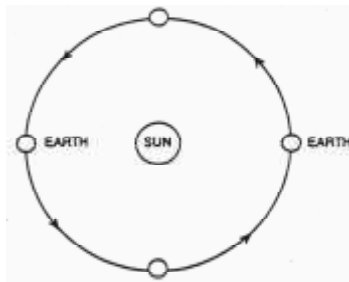
 7. Which is the best evidence for the Earth's rotation?
 - (1) the rising of the Sun
 - (2) the phases of the Moon
 - (3) the changing of the seasons
 - (4) the motion of a Foucault pendulum

8. In its orbit around the Sun, approximately how many degrees per day does the Earth revolve?
- (1) 1° (3) 15°
 (2) 365° (4) 90°

9. The diagram illustrates the orbital motion of the Earth.

The orbital motion is one of the factors that cause

- (1) the Coriolis Effect
 (2) sunrise and sunset
 (3) the changing seasons
 (4) circumpolar star trails



10. What is the total number of degrees that the Earth rotates on its axis during a 10-hour period?
- (1) 1° (3) 150°
 (2) 15° (4) 180°

11. Some stars that can be seen in New York State on a summer night cannot be seen on a winter night. This fact is a result of the
- (1) rotation of the Earth on its axis (3) rotation of the stars around Polaris
 (2) revolution of Polaris around the Earth (4) revolution of the Earth around the Sun

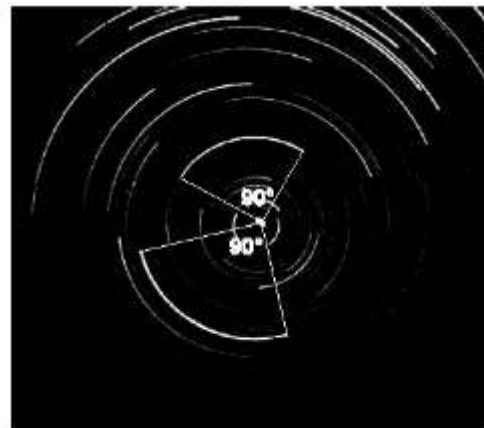
12. Evidence that the Earth rotates on its axis is provided by Foucault's pendulum and the
- (1) Coriolis Effect (3) phases of the moon
 (2) position of the Sun at solar noon (4) geocentric model of the solar system

13. Which real motion causes the Sun to appear to rise in the east and set in the west?
- (1) the Sun's revolution (3) the Earth's revolution
 (2) the Sun's rotation (4) the Earth's rotation

14. A camera was placed in an open field and pointed toward the northern sky. The lens of the camera was left open for a certain amount of time. The result is shown in the photograph below. The angle of the arc through which two of the stars appeared to move during this time exposure is shown.

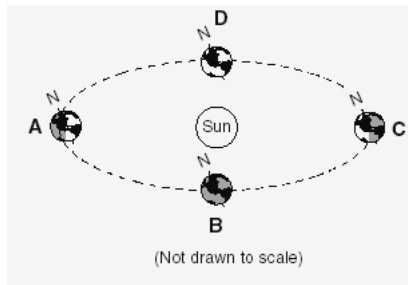
How many hours was the lens left open to produce the photograph?

- (1) 12 (3) 6
 (2) 2 (4) 4

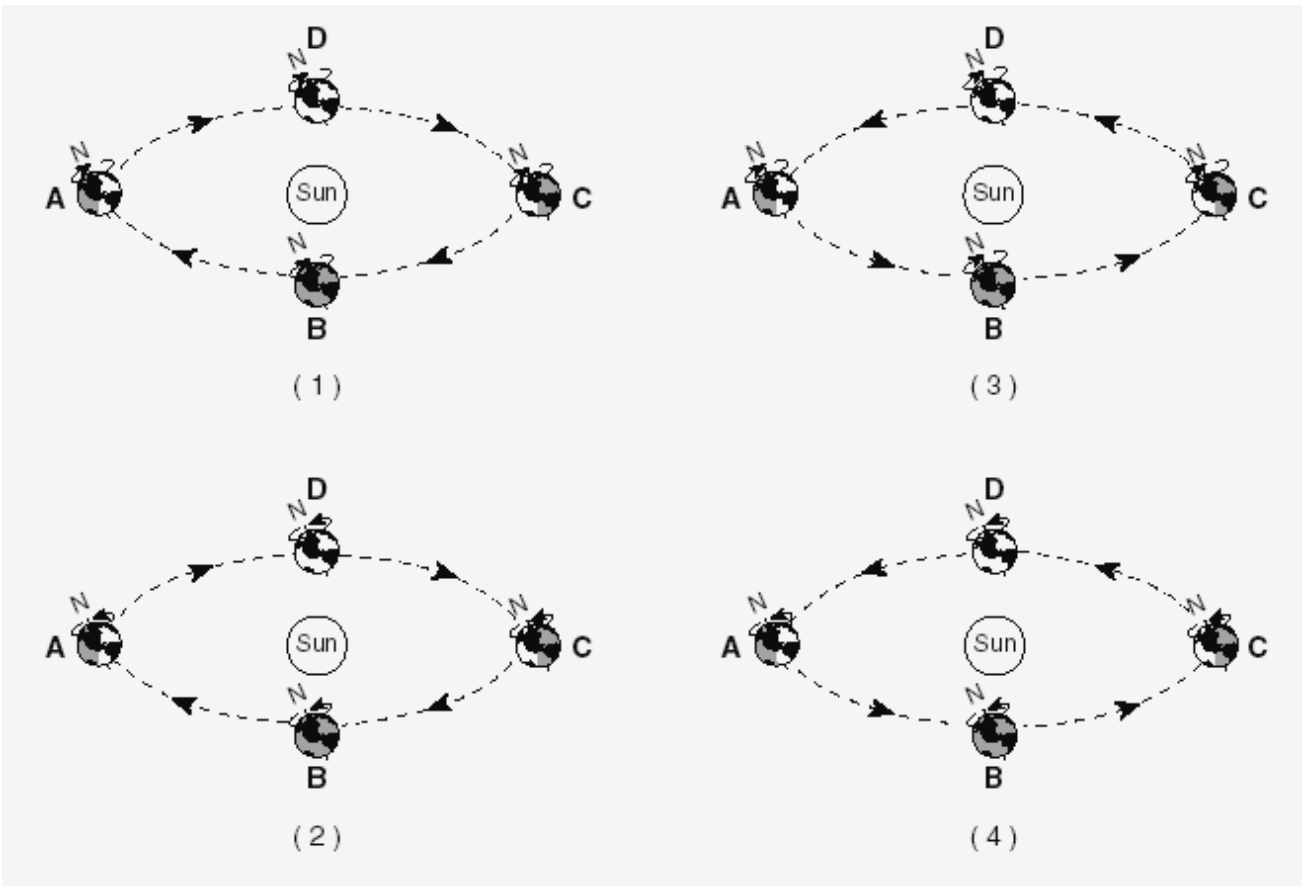


15. A rocket is fired from the North Pole directly south. To an observer on the Earth's surface, the rocket's path appears to curve to the right of its intended target. This is evidence that
- (1) the gravitational attraction varies over the surface of the Earth
 - (2) the Earth rotates on its axis
 - (3) the Earth orbits around the Sun in an elliptical path
 - (4) differences in air pressure exist between the North Pole and point A.

Base your answers to question 16 on the diagram below, which represents Earth in its orbit around the Sun. The position of Earth on the first day of each season is labeled A, B, C, and D.



16. Which diagram correctly shows the directions of Earth's revolution and rotation?



17. Which event is caused by Earth's revolution?
- (1) the apparent shift in the path of a Foucault pendulum
 - (2) deflection of planetary winds to the right in the Northern Hemisphere
 - (3) the apparent rising and setting of the Sun
 - (4) different constellations observed in the night sky throughout the year