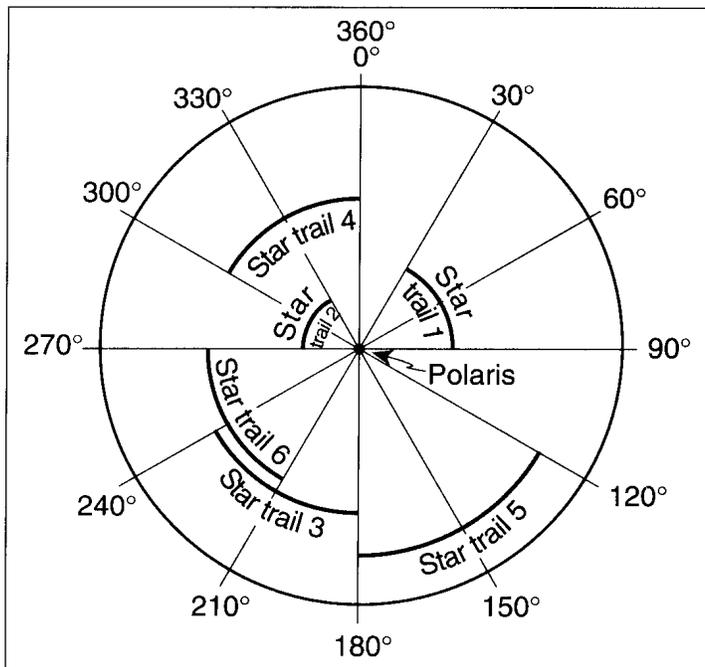


## Midterm Prep-Earth Rotation

- How many degrees does the Sun appear to move across the sky in four hours?  
A)  $60^\circ$  B)  $45^\circ$  C)  $15^\circ$  D)  $4^\circ$
- The spinning of Earth on its axis causes the apparent rising and setting of the  
A) Sun, only  
B) Sun and the Moon, only  
C) Moon and some stars, only  
D) Sun, the Moon, and some stars
- A camera was placed outside at night and pointed directly at *Polaris* and several other stars. The lens was kept open and a time-exposure photograph was taken. The diagram below represents that photograph of *Polaris* and star trails, with an angular protractor to measure apparent motion.

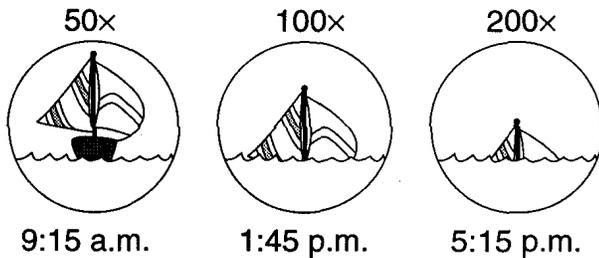


How many hours was the lens kept open to create the star trails in this photograph?

- A) 1 hour      B) 6 hours      C) 3 hours      D) 4 hours

## Midterm Prep-Earth Rotation

4. The diagrams below represent photographs of a large sailboat taken through a telescope over time as the boat sailed away from shore out to sea. Each diagram shows the magnification of the lenses and the time of day.



Which statement best explains the apparent sinking of this sailboat?

- A) The sailboat is moving around the curved surface of Earth.  
B) The sailboat appears smaller as it moves farther away.  
C) The change in density of the atmosphere is causing refraction of light rays.  
D) The tide is causing an increase in the depth of the ocean.
5. The Earth's actual shape is most correctly described as
- A) a circle                      B) a perfect sphere  
C) an oblate sphere        D) an eccentric ellipse
6. Which object best represents a true scale model of the shape of the Earth?
- A) a Ping-Pong ball        B) a football  
C) an egg                      D) a pear
7. Compared to the weight of a person at the North Pole, the weight of the same person at the Equator would be
- A) slightly less, because the person is farther from the center of Earth  
B) slightly less, because the person is closer to the center of Earth  
C) slightly more, because the person is farther from the center of Earth  
D) slightly more, because the person is closer to the center of Earth

8. The best evidence that the Earth has a spherical shape is provided by
- A) photographs of the Earth taken from space satellites  
B) the amount of daylight received at the North Pole on June 21  
C) the changing orbital speed of the Earth in its orbit around the Sun  
D) the cyclic change of seasons
9. The path of a Foucault pendulum provides evidence that Earth
- A) rotates on its axis  
B) revolves in its orbit  
C) is tilted on its axis  
D) has an elliptical orbit

## Midterm Prep-Earth Rotation

10. Base your answer to the following question on the diagrams below, which represent two views of a swinging Foucault pendulum with a ring of 12 pegs at its base.

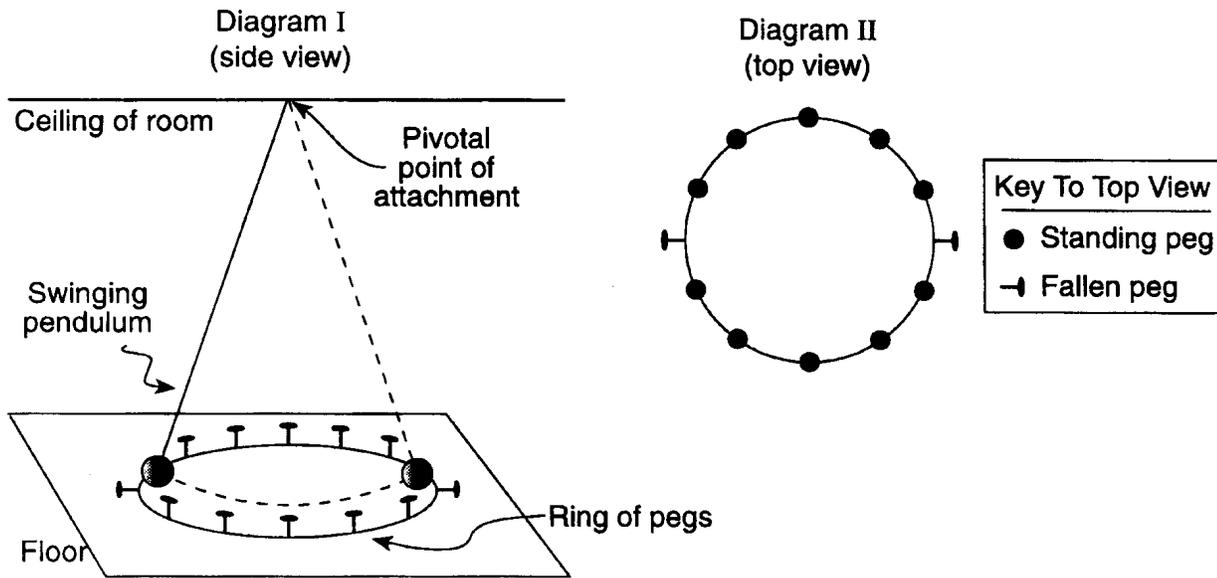
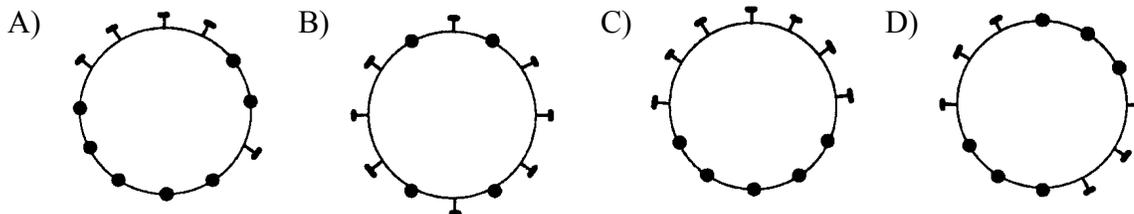


Diagram II shows two pegs tipped over by the swinging pendulum at the beginning of the demonstration. Which diagram shows the pattern of standing pegs and fallen pegs after several hours?



11. What causes the Coriolis effect?

A) high and low-pressure belts  
B) the Earth's revolution  
C) the equatorial calms  
D) the Earth's rotation

12. Evidence that the Earth rotates on an axis is provided by the Coriolis effect and the

A) Foucault pendulum  
B) phases of the Moon  
C) position of the Sun at solar noon  
D) geocentric model of the solar system

13. In the Northern Hemisphere, planetary winds blowing from north to south are deflected, or curved, toward the west. This deflection is caused by the

A) unequal heating of land and water surfaces  
B) movement of low-pressure weather systems  
C) orbiting of Earth around the Sun  
D) spinning of Earth on its axis