Name: _____

Date: _____ Period: _____

Solar System

Practice Test

Directions: For questions 1-25 record your answers on the scantron provided. Some questions may require the use of the 2011 Edition Reference Tables for Physical Setting/Earth Science.

1) Evidence that Earth revolves around the Sun is provided by the

1) apparent rising and setting of the Sun during one day
2) seasonal changes in the apparent positions of constellations
3) apparent rising and setting of *Polaris* during one day
4) hourly changes in the apparent direction of the swing of a Foucault pendulum

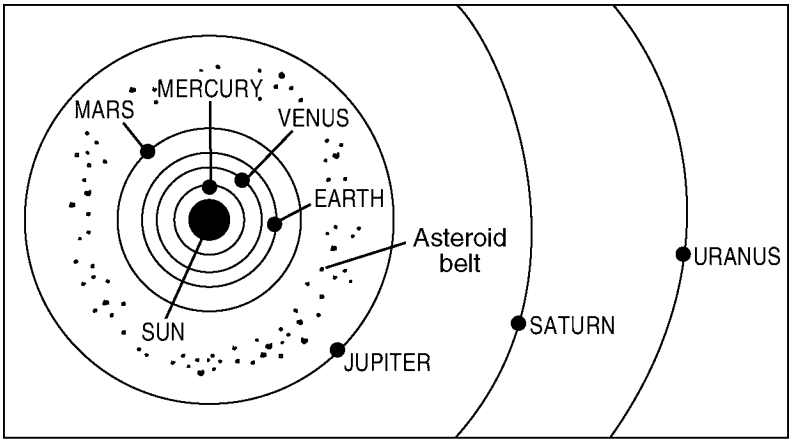
2) During which month does the Sun appear to rise *farthest* north of due east for an observer in New York State?

1) June 2) July 3) December 4) January

3) To a nighttime observer on Earth, how many degrees do the stars appear to move around *Polaris* in 3 hours?

1) 60° 2) 3° 3) 45° 4) 15°

4) The diagram below shows a portion of the solar system.



(not drawn to scale)

What is the average distance, in millions of kilometers, from the Sun to the asteriod belt?

1) 503 2) 189 3) 857 4) 129

5) Which motion causes the Coriolis effect on Earth?

1) revolution of Earth around the Sun
2) rotation of the Moon on its axis
3) revolution of the Moon around Earth
4) rotation of Earth on its axis

6) The motion of a Foucault pendulum provides evidence that Earth

1) travels around the Sun
2) is tilted on its axis
3) spins on its axis
4) varies in distance from the Sun

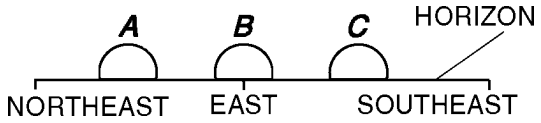
7) The terrestrial planets differ from the Jovian planets because the terrestrial planets are

1) more dense and larger 2) less dense and larger 3) less dense and smaller 4) more dense and smaller

8) Why is the surface of Mercury covered with meteor impact craters, while Earth's surface has relatively few craters?

1) Earth's less dense water surface attracts fewer meteors.
2) Earth's hydrosphere and atmosphere destroyed or buried most meteor impact sites.
3) Mercury is larger than Earth, so it gets hit with more meteors.
4) Mercury is an older planet, so it has a longer history of meteor impacts.

9) A student in New York State looked toward the eastern horizon to observe sunrise at three different times during the year. The student drew the following diagram that shows the positions of sunrise, *A*, *B*, and *C*, during this one-year period.



Which list correctly pairs the location of sunrise to the time of the year?

1) *A* — June 21
B — December 21
C — March 21

2) *A* — December 21
B — March 21
C — June 21

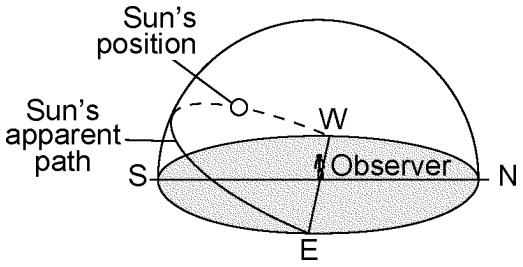
3) *A* — June 21
B — March 21
C — December 21

4) *A* — March 21
B — June 21
C — December 21

10) As Earth travels in its orbit, Earth's axis

1) remains aligned with the Sun's axis
2) is pointing toward the center of the Milky Way
3) is perpendicular to the Moon's axis
4) remains parallel to itself at all Earth positions

11) The diagram below represents the apparent path of the Sun as seen by an observer at 65°N on March 21.



The Sun's position shown in the diagram was observed closest to which time of day?

1) 6 p.m. 2) 11 a.m. 3) 9 a.m. 4) 3 p.m.

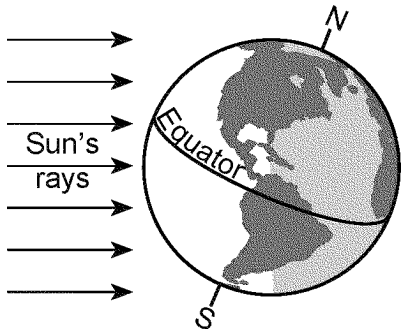
12) When the distance between the foci of an ellipse is increased, the eccentricity of the ellipse will

1) increase
2) remain the same
3) decrease

13) To an observer in New York State the duration of daylight increases continuously from

1) March 1 to May 1
2) June 1 to August 1
3) December 1 to February 1
4) September 1 to November 1

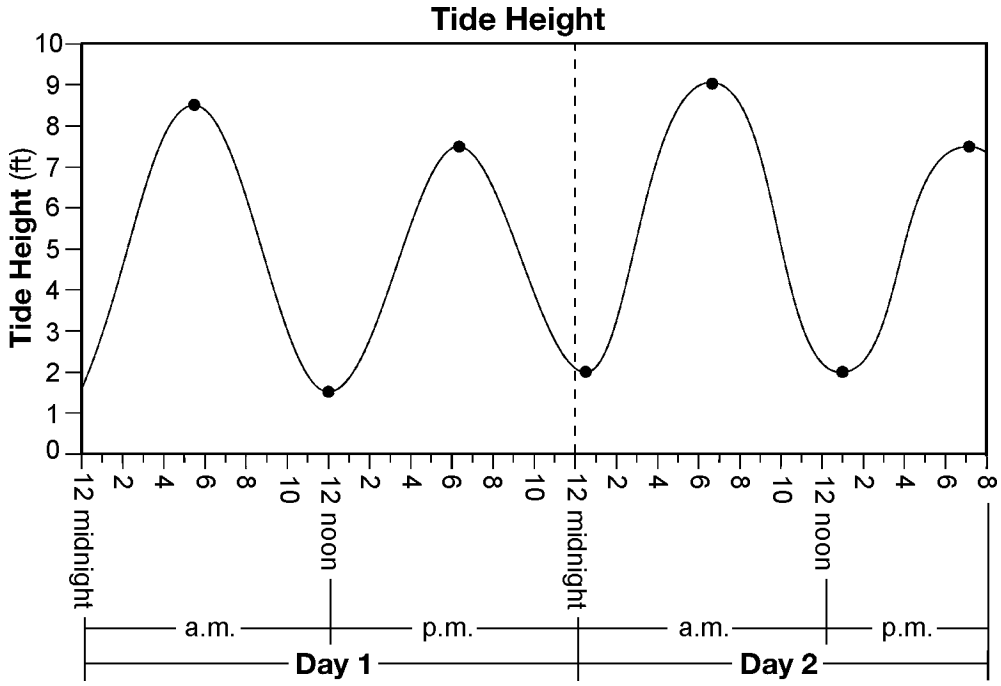
14) The diagram below represents Earth in space on the first day of a season.



Which season is beginning in New York State on the day represented in the diagram?

1) spring
2) fall
3) winter
4) summer

15) The graph below shows ocean tide height in feet (ft) over a 44 hour period for a coastal location in the northeastern United States. The dots represent either high or low tides.



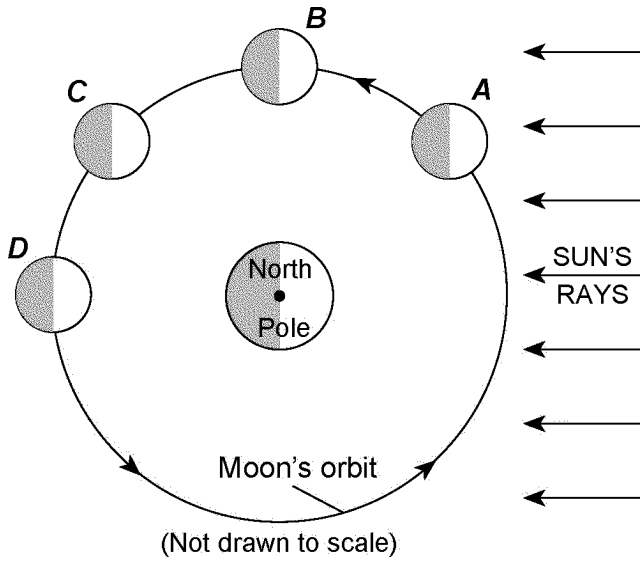
If the pattern shown continued, the next low tide occurred on Day 3 at approximately

1) 1:00 p.m.
2) 1:30 a.m.
3) 12 midnight
4) 6:00 p.m.

16) Which process combines lighter elements into heavier elements and produces energy within the Sun and other stars?

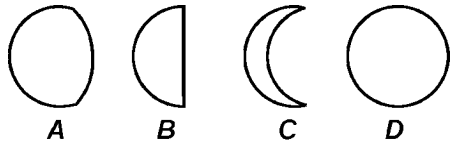
1) conduction
2) fusion
3) radioactive decay
4) insolation

17) The diagram below represents four positions of the Moon, labeled *A* through *D*, as it orbits Earth.

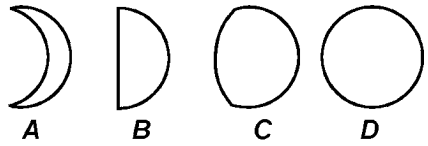


Which one of the following diagrams *best* represents the sequence of Moon phases, as seen by an observer in New York State, when the Moon travels from position *A* to position *D* in its orbit around Earth?

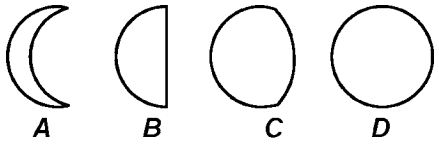
1)



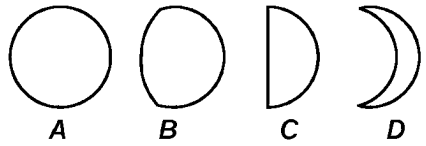
2)



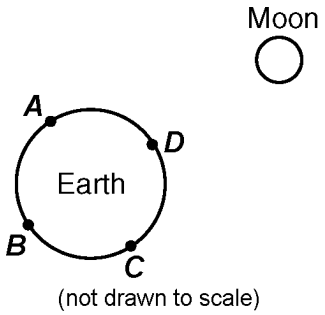
3)



4)



18) The diagram below represents Earth and the Moon as viewed from above the North Pole. Points *A*, *B*, *C*, and *D* are locations on Earth's surface.



According to the diagram, where will high ocean tides and low ocean tides most likely be located?

1) high tides at *A* and *B*; low tides at *C* and *D*

2) high tides at *C* and *D*; low tides at *A* and *B*

3) high tides at *A* and *C*; low tides at *B* and *D*

4) high tides at *B* and *D*; low tides at *A* and *C*

19) The chart below describes some components of the solar system.

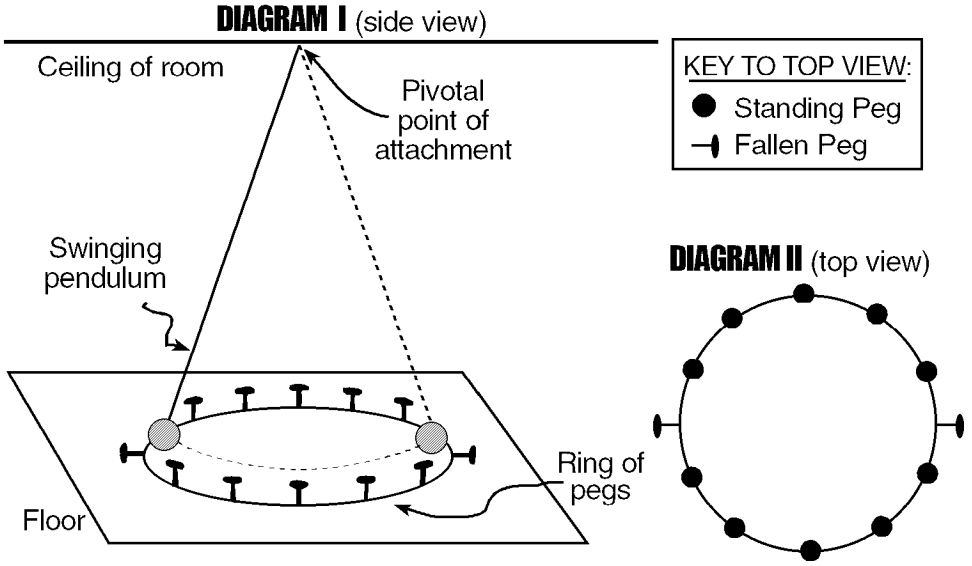
Object	Description
X	chunk of rock and ice orbiting from the outer solar system to near the Sun
Y	streak of light seen when a space rock enters Earth's atmosphere and starts burning up
Z	rocky/metallic object orbiting the Sun between Mars and Jupiter

Letters *X*, *Y*, and *Z* identify which components of our solar system?

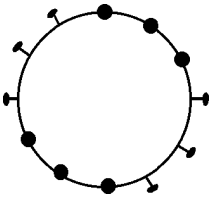
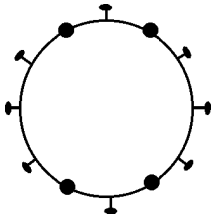
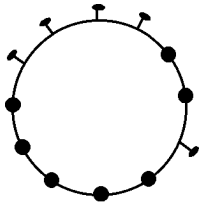
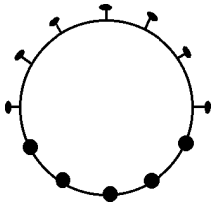
1) *X* = asteroid; *Y* = meteor; *Z* = moon
2) *X* = asteroid; *Y* = meteor; *Z* = comet
3) *X* = comet; *Y* = meteor; *Z* = asteroid
4) *X* = comet; *Y* = moon; *Z* = meteor

Question 20 refers to the following:

The diagrams below represent two views of a swinging Foucault pendulum with a ring of 12 pegs at its base.

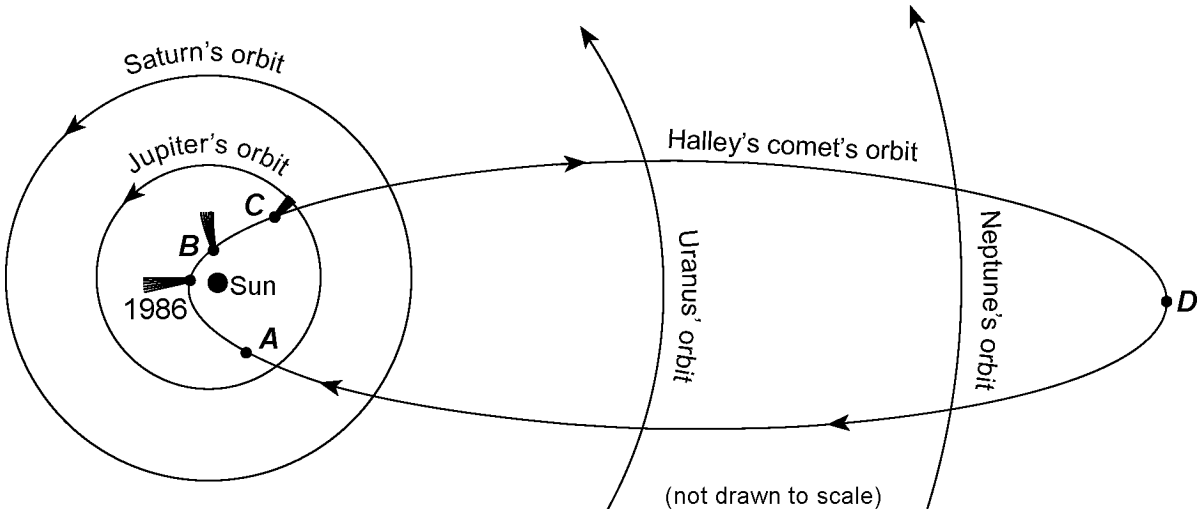


20) Diagram *II* shows two pegs tipped over by the swinging pendulum at the beginning of the demonstration Which diagram shows the pattern of standing pegs and fallen pegs after several hours?

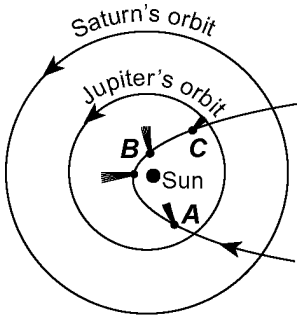
1) 
2) 
3) 
4) 

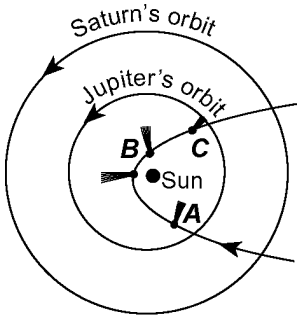
Questions 21 through 24 refer to the following:

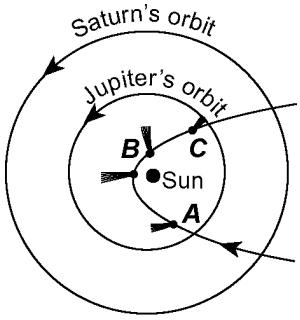
The diagram below represents the orbital paths of the four Jovian planets and Halley's comet around the Sun. Halley's comet has a revolution period of 76 years. In 1986, Halley's comet was at perihelion, its closest point to the Sun. Letters *A*, *B*, *C*, and *D* represent locations of Halley's comet in its orbit. Location *D* represents Halley's comet at aphelion, its farthest point from the Sun. The comet's tail is shown at perihelion and at locations *B* and *C*.

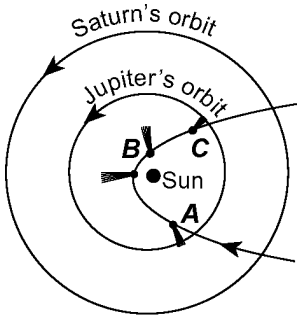


21) Based on the pattern shown, which diagram *best* represents the correct position of the comet's tail at location *A* relative to the Sun?

1)


2)


3)


4)


22) Compared to the orbit of the Jovian planets, the orbit of Halley's comet is

1) less elliptical, with a greater distance between its foci
2) more elliptical, with a greater distance between its foci
3) more elliptical, with a shorter distance between its foci
4) less elliptical, with a shorter distance between its foci

23) Compared to the velocity of Jupiter in its orbit, the velocity of Halley's comet is

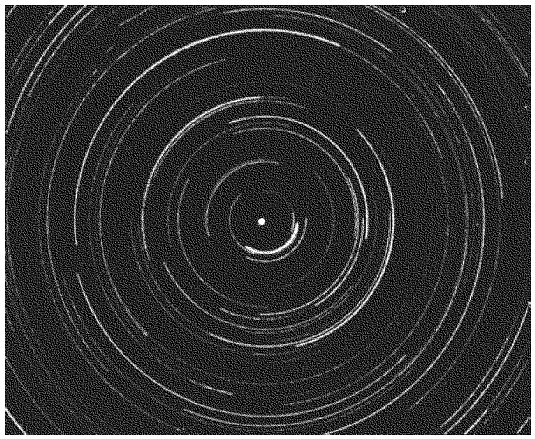
1) always greater
2) always the same
3) sometimes less and sometimes greater
4) always less

24) The given diagram of our solar system represents a

1) heliocentric model with the Sun near the center
2) heliocentric model with Earth near the center
3) geocentric model with the Sun near the center
4) geocentric model with Earth near the center

Questions 25 and 26 refer to the following:

The time-exposure photograph shown below was taken by aiming a camera at a portion of the night sky above a New York State location and leaving the camera's shutter open for a period of time to record star trails.



25) Which celestial object is shown in the given photograph near the center of the star trails?

1) the Moon 2) the Sun 3) *Polaris* 4) *Sirius*