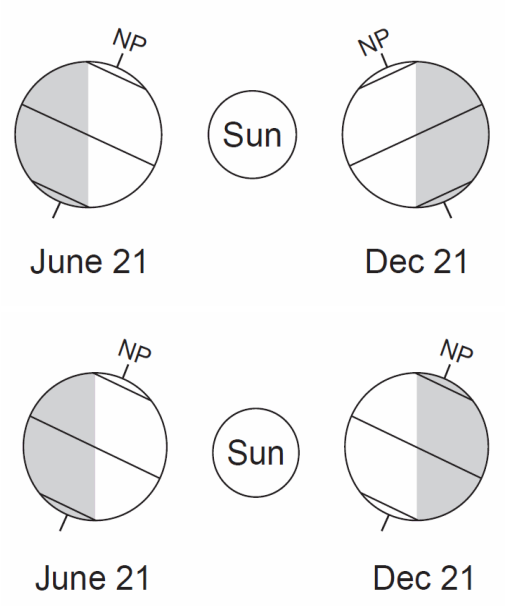
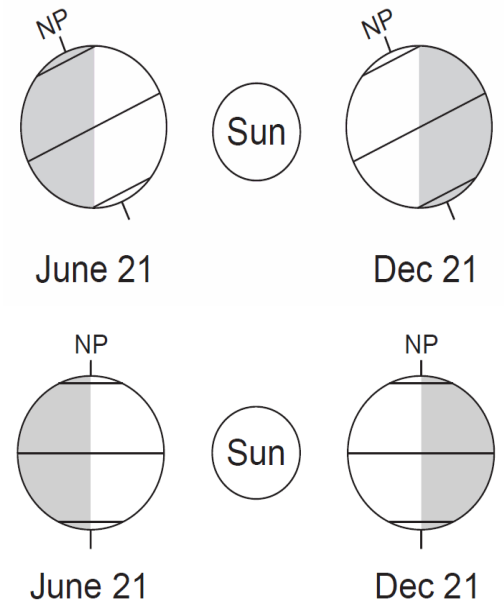
Regents Review Packet #2
Multiple Choice

1. Which diagram best represents the regions of Earth in sunlight on June 21 and December 21? [NP indicates the North Pole and the shading represents Earth's night side. Diagrams are not drawn to scale.]

A)



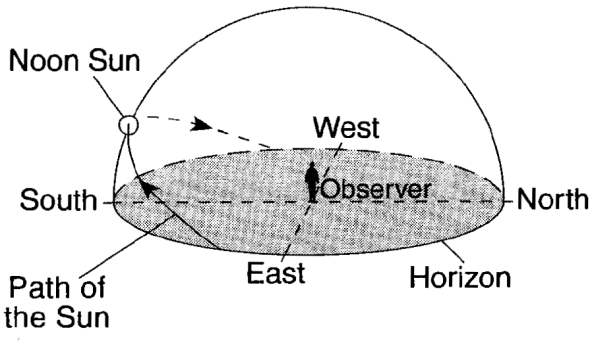
B)



C)

D)

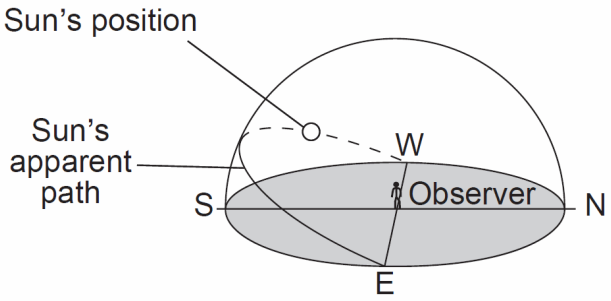
2. The model below shows the apparent path of the Sun as seen by an observer in New York State on the first day of one of the four seasons.



This apparent path of the Sun was observed on the first day of

A) spring
B) summer
C) fall
D) winter

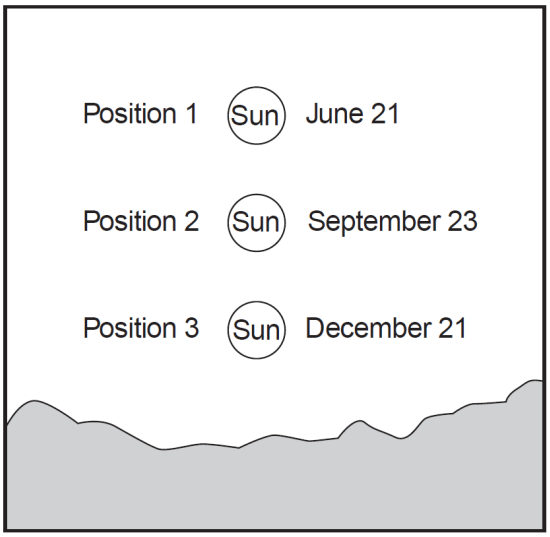
3. The diagram below represents the apparent path of the Sun as seen by an observer at 65° N on March 21.



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

A) 9 a.m.
B) 11 a.m.
C) 3 p.m.
D) 6 p.m.

4. Positions 1, 2, and 3 in the diagram below represent the noon Sun above the horizon on three different days during the year, as viewed from Binghamton, New York.



South

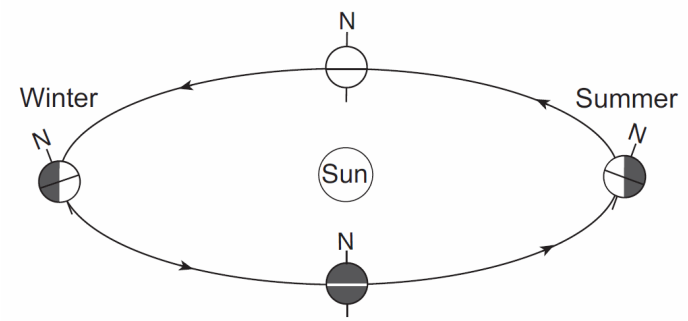
(Not drawn to scale)

At which position was the noon Sun on January 21, as viewed from Binghamton?

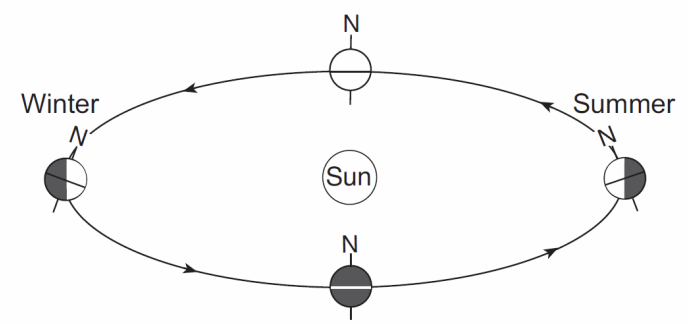
A) above position 1
B) below position 3
C) between position 1 and position 2
D) between position 2 and position 3

5. Which diagram best represents the tilt of Earth's axis that causes the Northern Hemisphere seasons shown? (Diagrams are not drawn to scale.)

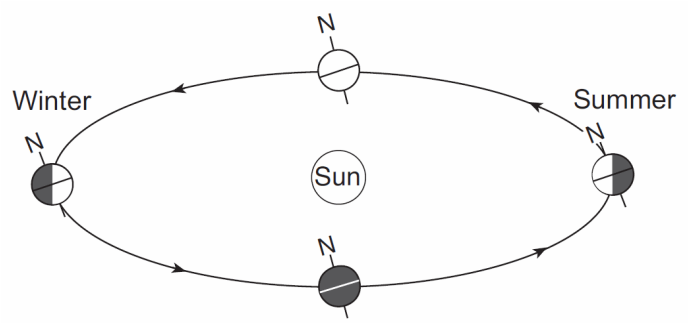
A)



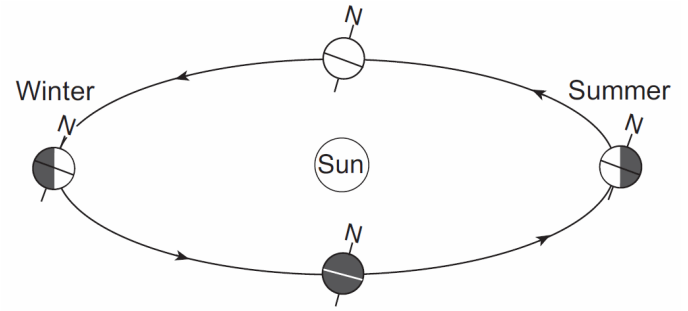
B)



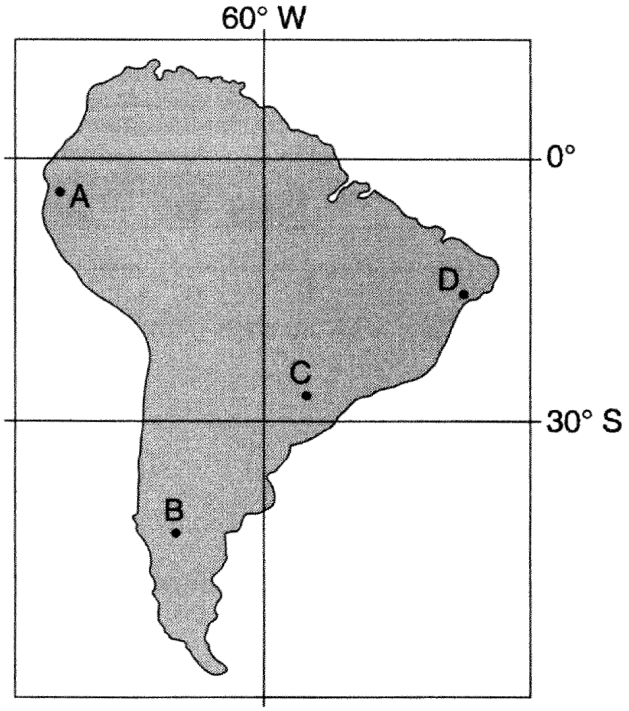
C)



D)



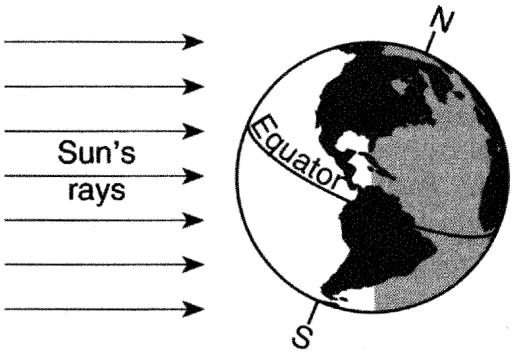
6. The map below shows four locations, *A*, *B*, *C*, and *D*, on the continent of South America.



Which location is the first to experience sunset on September 23?

A) *A* B) *B* C) *C* D) *D*

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



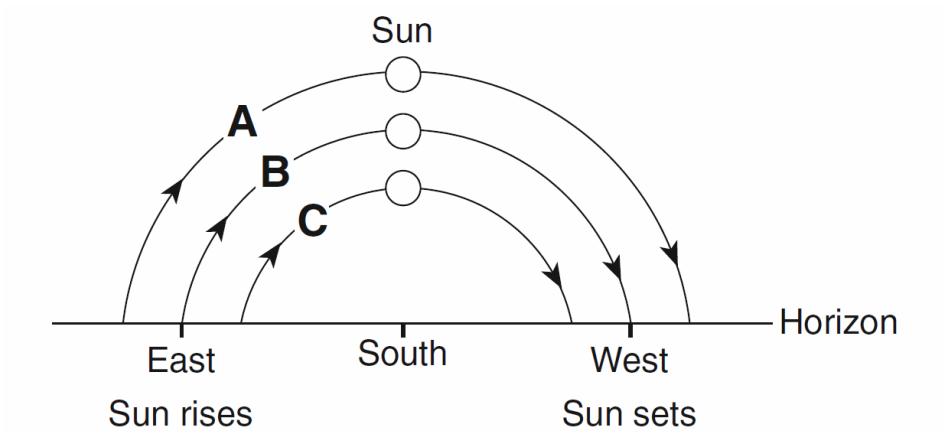
Which season is beginning in New York State on the day represented in the diagram?

A) winter B) spring
C) summer D) fall

8. Which hot spot location on Earth's surface usually receives the greatest intensity of insolation on June 21?

A) Iceland B) Hawaii
C) Easter Island D) Yellowstone

9. The diagram below represents the horizon and the Sun's apparent paths, *A*, *B*, and *C*, on three different dates, as viewed from the same location in New York State.



Which table correctly shows the dates on which the apparent paths of the Sun were observed?

A)

Path of Sun	Date
A	December 21
B	September 23
C	March 21

B)

Path of Sun	Date
A	December 21
B	March 21
C	June 21

C)

Path of Sun	Date
A	March 21
B	September 23
C	June 21

D)

Path of Sun	Date
A	June 21
B	March 21
C	December 21

10. During which Northern Hemisphere season is Earth closest to the Sun?

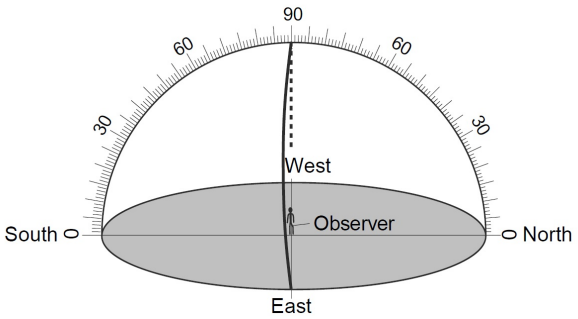
A) spring
B) summer
C) autumn
D) winter

11. Evidence that Earth revolves around the Sun is provided by the

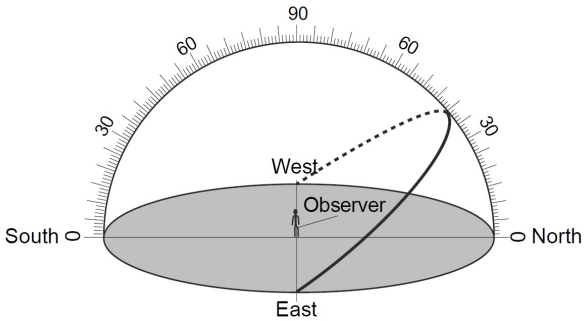
A) apparent rising and setting of the Sun during one day
B) apparent rising and setting of *Polaris* during one day
C) seasonal changes in the apparent positions of constellations
D) hourly changes in the apparent direction of the swing of a Foucault pendulum

12. Which diagram represents the apparent path of the Sun on March 21 for an observer at the equator?

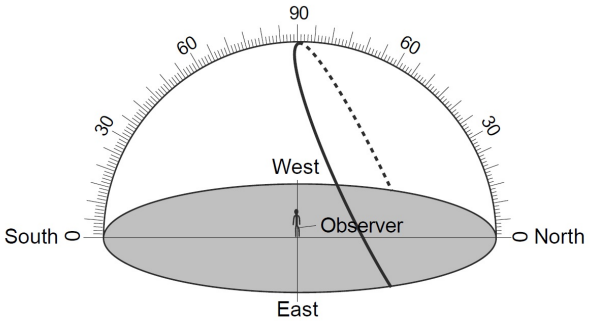
A)



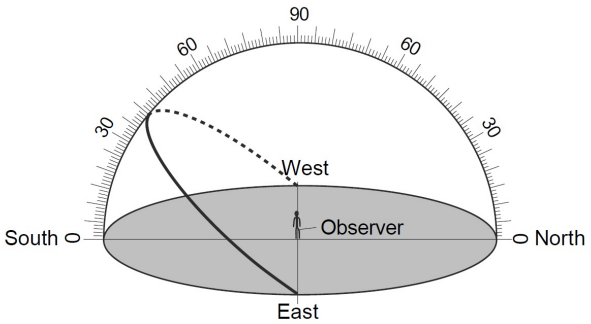
B)



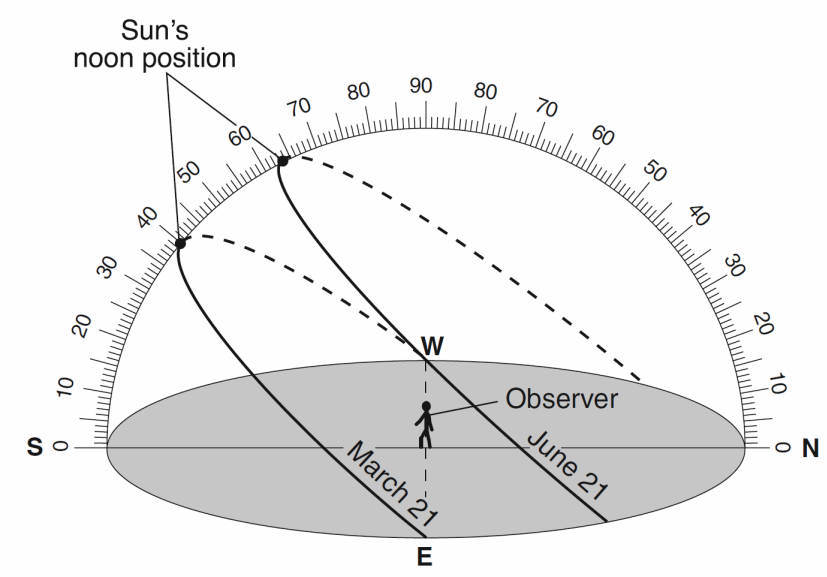
C)



D)



Base your answers to questions **13** through **15** on
diagram and data table below. The diagram represents the Sun's apparent paths as viewed by an observer located at 50° N latitude on June 21 and March 21. The data table shows the Sun's maximum altitude for the same two dates of the year. The Sun's maximum altitude for December 21 has been left blank.



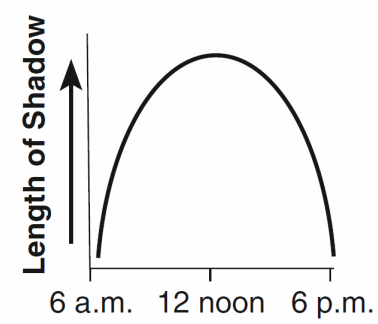
Data Table

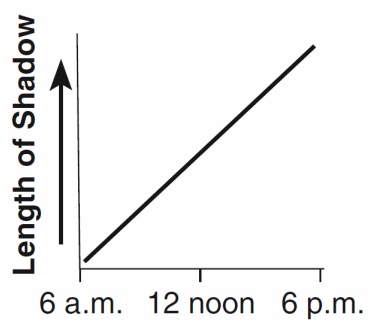
Date	Sun's Maximum Altitude
June 21	63.5°
March 21	40°
December 21	

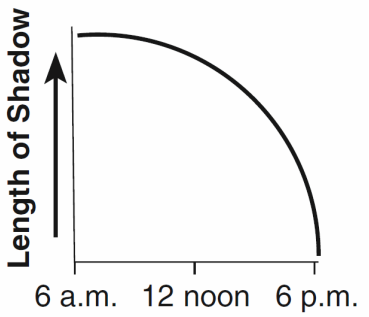
13. Which statement best compares the intensity and angle of insolation at noon on March 21 and June 21?

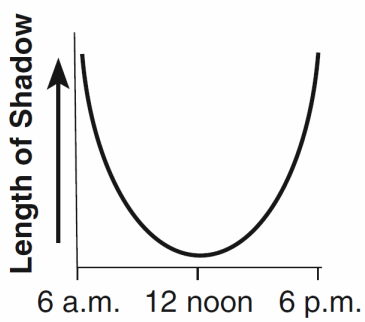
A) The intensity and angle of insolation are greatest on March 21.
B) The intensity and angle of insolation are greatest on June 21.
C) The intensity of insolation is greatest on June 21 and the angle of insolation is greatest on March 21.
D) The intensity of insolation is greatest on March 21 and the angle of insolation is greatest on June 21.

14. Which graph best represents the relationship between the time of day and the length of a shadow cast bythe observer on March 21?

A)


B)


C)


D)


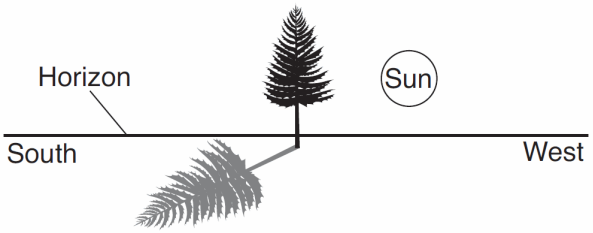
15. Which value should be placed in the data table for the Sun's maximum altitude on December 21?

A) 16.5° B) 23.5° C) 40° D) 90º

16. Seasonal changes on Earth are primarily caused by the

A) parallelism of the Sun's axis as the Sun revolves around Earth
B) changes in distance between Earth and the Sun
C) elliptical shape of Earth's orbit around the Sun
D) tilt of Earth's axis as Earth revolves around the Sun

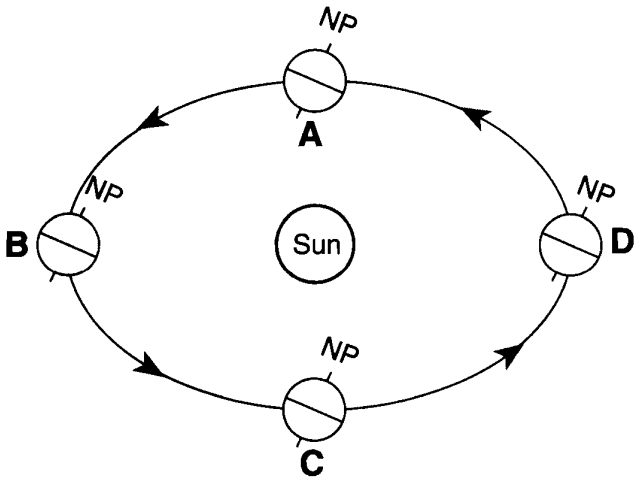
17. A tree in New York State casts a shadow as shown in the diagram below.



What time of day and season are represented by the diagram?

A) early morning in winter
B) early morning in summer
C) late afternoon in winter
D) late afternoon in summer

18. Base your answer to the following question on the diagram below, which represents Earth revolving around the Sun. Letters *A, B, C*, and *D* represent Earth's location in its orbit on the first day of the four seasons. NP represents the North Pole.



(Not drawn to scale)

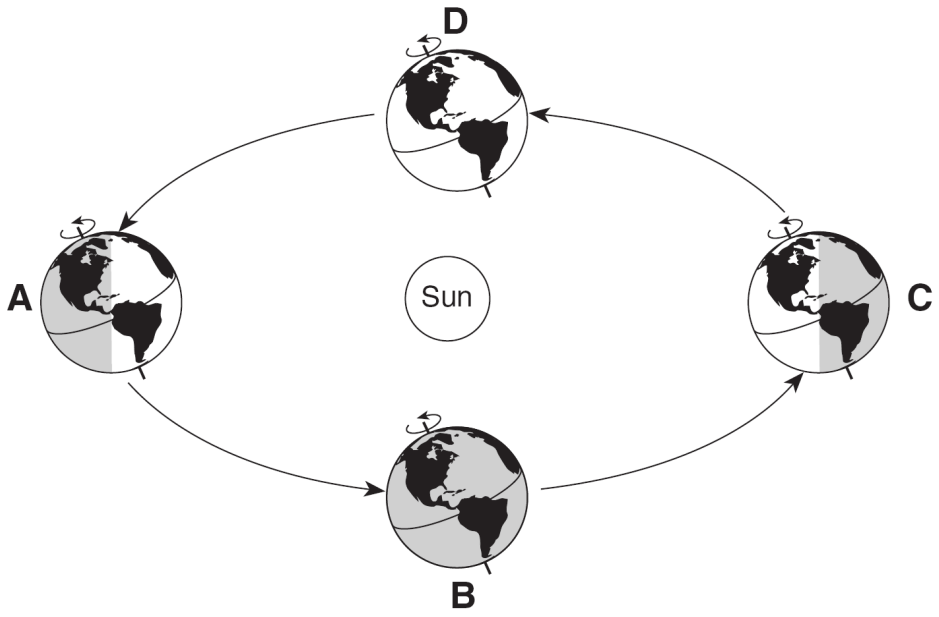
If the tilt of Earth's axis were decreased from 23.5° to 15°, New York State's winters would become

A) warmer, and summers would become cooler
B) warmer, and summers would become warmer
C) cooler, and summers would become cooler
D) cooler, and summers would become warmer

19. Which two factors cause the perpendicular rays of the Sun to move between 23.5º N and 23.5º S?

A) tilt of Earth's axis and Earth's revolution
B) tilt of Earth's axis and Earth's rotation
C) eccentricity of Earth's orbit and Earth's revolution
D) eccentricity of Earth's orbit and Earth's rotation

Base your answers to questions **20** through **22** on the diagram below, which shows a model of Earth's orbit around the Sun. Letters *A*, *B*, *C*, and *D* represent Earth's position at the beginning of each season.

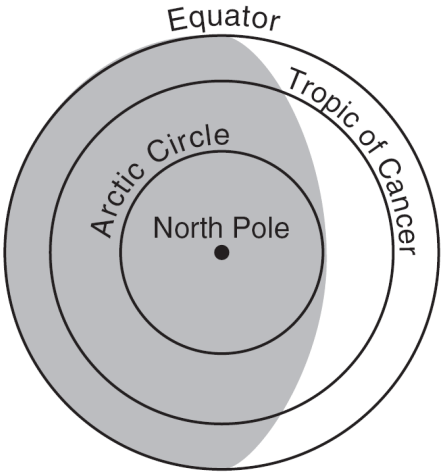


(Not drawn to scale)

20. How many degrees will the Sun's vertical rays shift on Earth's surface as Earth travels from position *C* to position *D*?

A) 15° B) 23.5° C) 47° D) 365°

21. The diagram below shows how Earth is illuminated [lighted] by the Sun as viewed from above the North Pole.



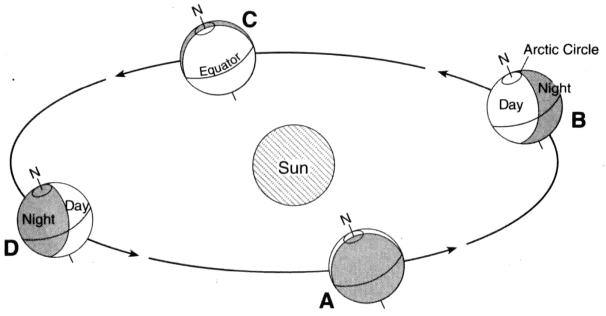
In which orbital position would Earth be illuminated as shown?

A) *A* B) *B* C) *C* D) *D*

22. Which position of Earth represents the first day of summer in the Northern Hemisphere?

A) *A* B) *B* C) *C* D) *D*

23. The diagram below shows Earth's orbit around the Sun. Locations *A, B, C,* and *D* represent Earth on the first day of each season.

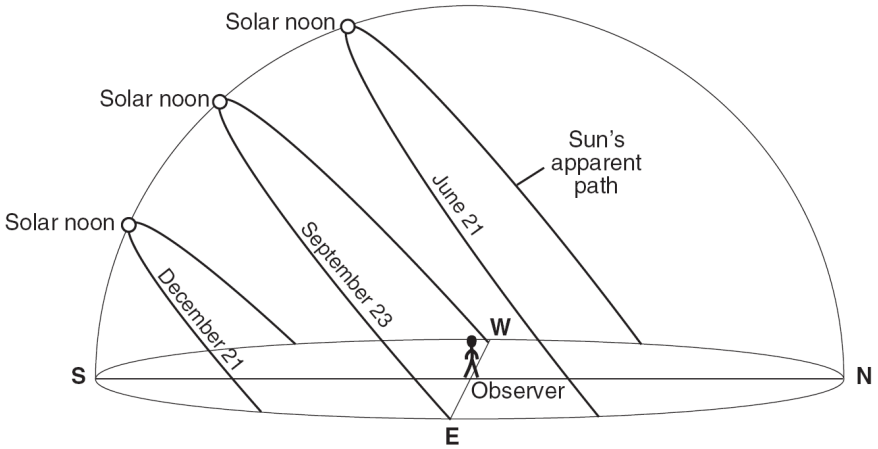


(Not drawn to scale)

Which location represents March 21?

A) *A* B) *B* C) *C* D) *D*

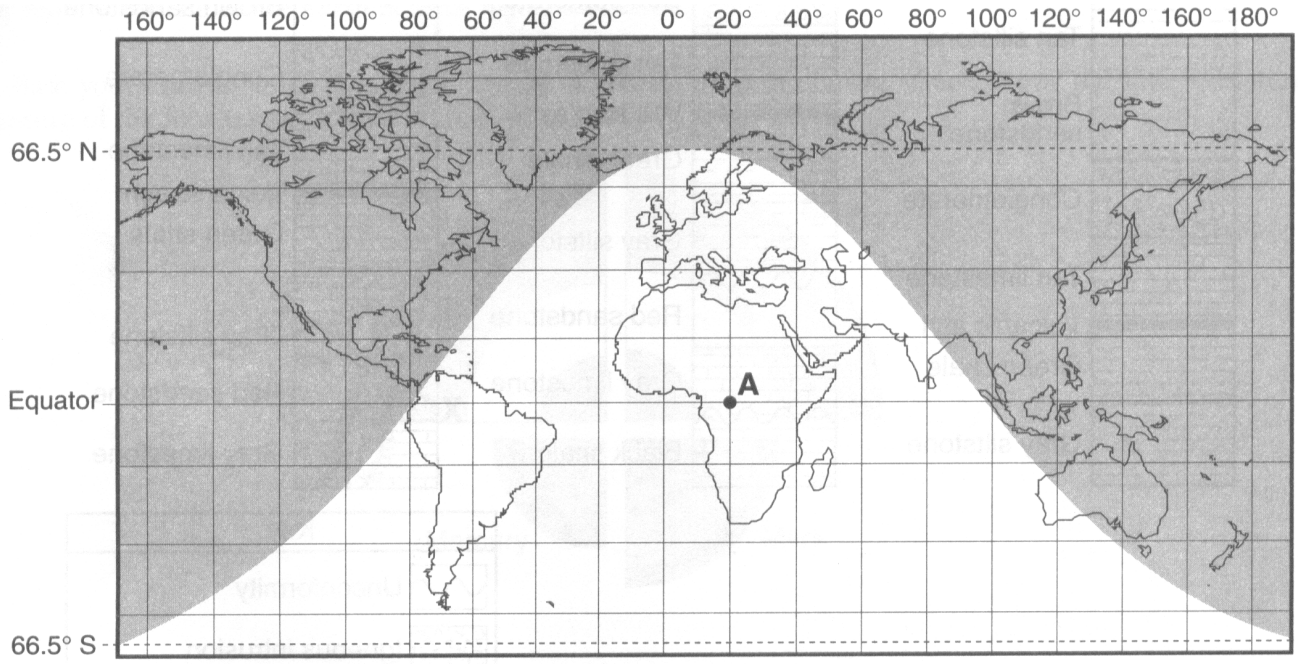
24. Base your answer to the following question on diagram below, which represents the Sun's apparent paths and the solar noon positions for an observer at 42° N latitude on December 21, September 23, and June 21.



How many hours occurred between sunrise and solar noon on September 23?

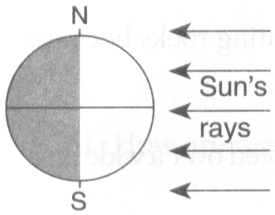
A) 6 B) 8 C) 12 D) 24

Base your answers to questions **25** through **27** on the world map below. The shaded portion of the map indicates areas of night, and the unshaded portion indicates areas of daylight on a certain day of the year. Dashed latitude lines represent the Arctic Circle (66.5° N) and the Antarctic Circle (66.5° S). Point *A* is a location on Earth's surface.

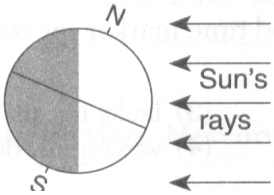


25. Which diagram shows the position of Earth relative to the Sun's rays on this day?

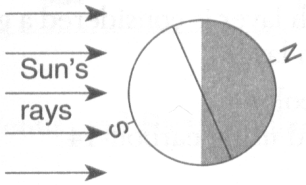
A)



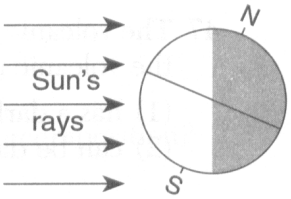
B)



C)



D)



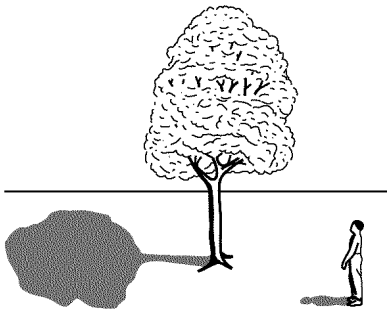
26. Approximately how many hours of daylight would occur at position *A* on this day?

A) 6 B) 9 C) 12 D) 15

27. On this day, the duration of daylight from the equator to the Arctic Circle

A) decreases, only
B) increases, only
C) decreases, then increases
D) increases, then decreases

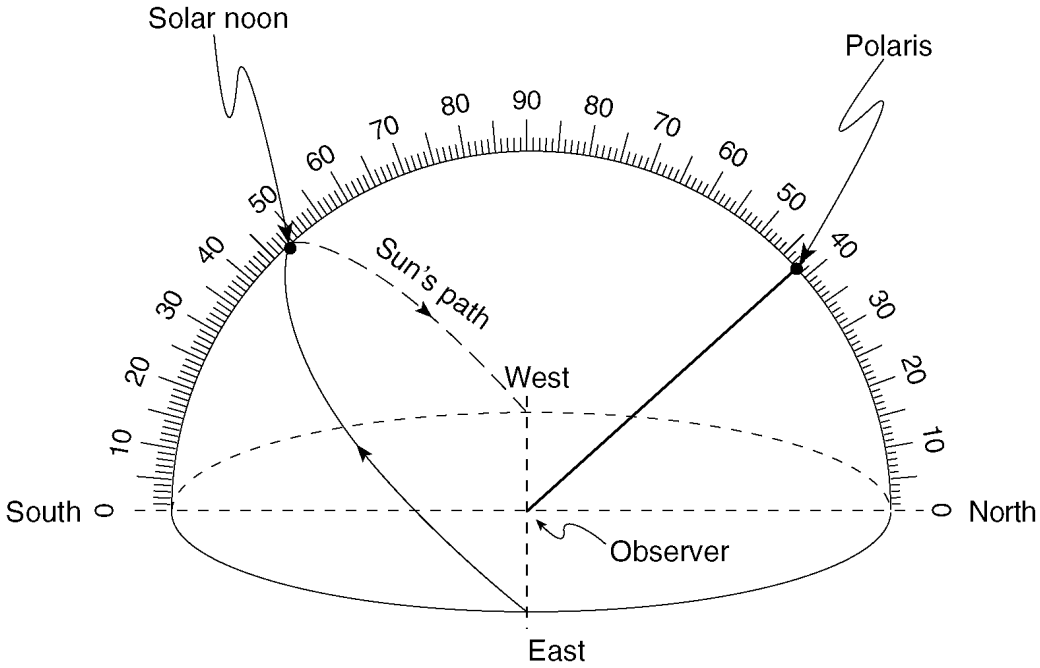
28. The diagram below shows the noontime shadows cast by a student and a tree.



If the time is solar noon and the student is located in New York State, in what direction is the student facing?

A) north B) south C) east D) west

Base your answers to questions **29** through **31** on the diagram below, which represents a model of the sky (celestial sphere) for an observer in New York State. The curved arrow represents the Sun's apparent path for part of one day. The altitude of *Polaris* is also indicated.



29. According to this diagram, what is the Sun's altitude at solar noon?

A) 23.5° B) 42° C) 48° D) 90°

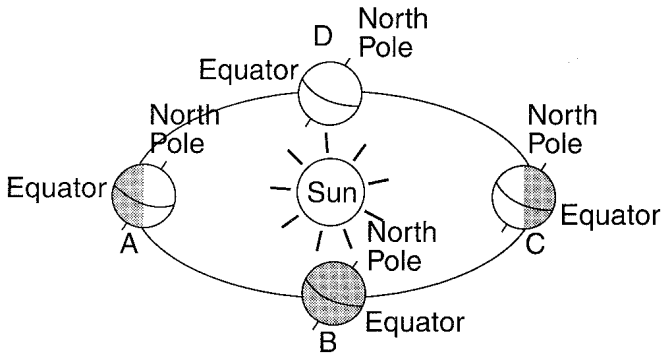
30. Where is this observer most likely located?

A) Massena B) Oswego
C) Slide Mountain D) Mt. Marcy

31. On which date could this observation of the Sun's apparent path have been made?

A) March 21 B) July 21 C) October 21 D) December 21

32. The diagram below represents Earth at four different positions, *A, B, C,* and *D,* in its orbit around the Sun.

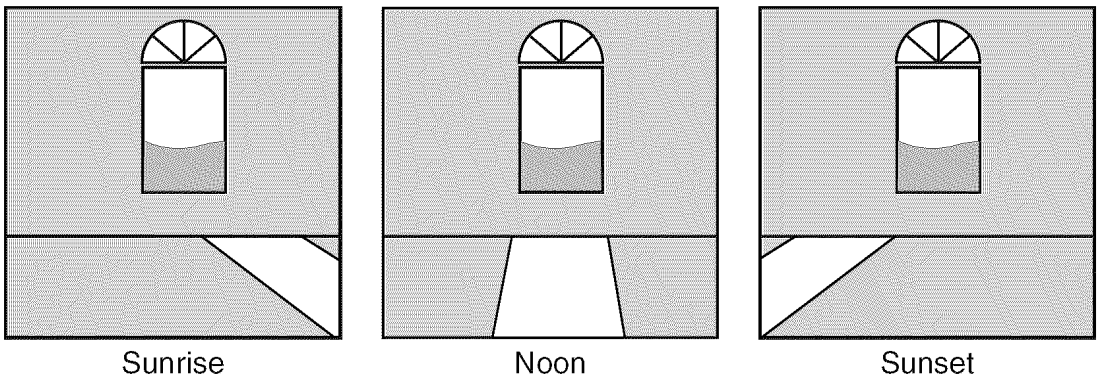


(Not drawn to scale)

Between which positions would Texas be experiencing the summer season?

A) *A* and *B* B) *B* and *C*
C) *C* and *D* D) *D* and *A*

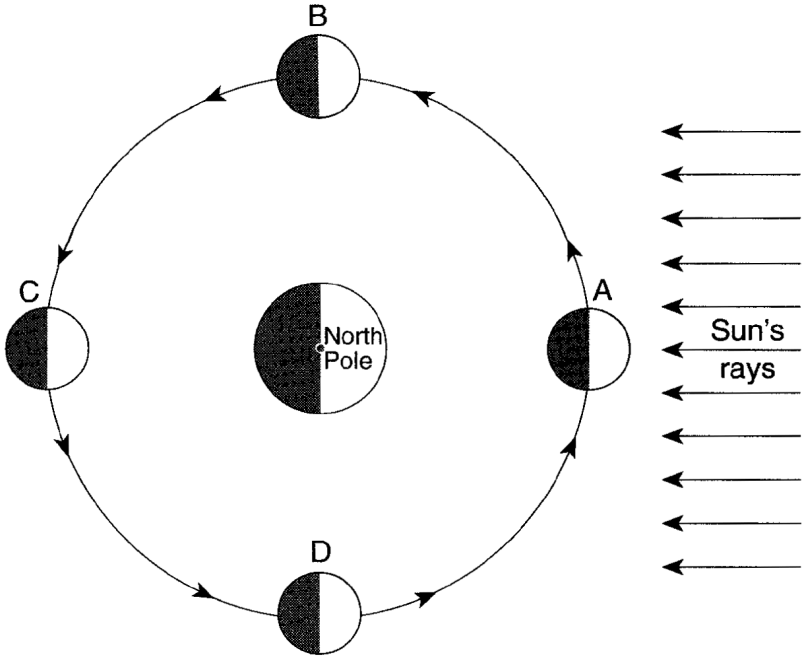
33. Base your answer to the following question on the diagram below, which shows sunlight entering a room through the same window at three different times on the same winter day.



This room is located in a building in Connecticut. On which side of the building is the window located?

A) north B) south C) east D) west

34. Base your answer to the following question on the diagram below and on your knowledge of Earth science. The diagram represents the Moon at different positions, labeled *A, B, C*, and *D*, in its orbit around Earth.

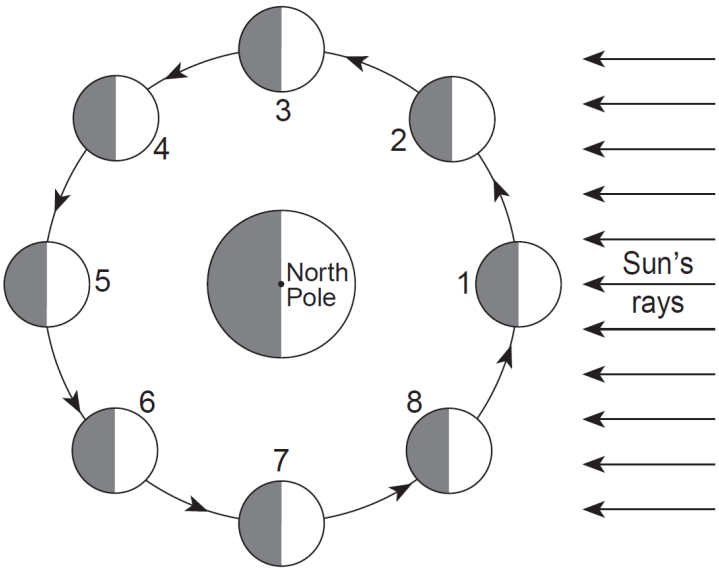


(Not drawn to scale)

At which two Moon positions would an observer on Earth most likely experience the highest high tides and the lowest low tides?

A) *A* and *B* B) *B* and *C* C) *C* and *A* D) *D* and *B*

Base your answers to questions **35** through **37** on the diagram below and on your knowledge of Earth science. The diagram represents eight numbered positions of the Moon in its orbit around Earth.



(Not drawn to scale)

35. Which phase of the Moon will be observed in New York State when the Moon is at position 8?

A)  B)  C)  D) 

36. Which two motions cause the Moon to show a complete cycle of phases each month when viewed from New York State?

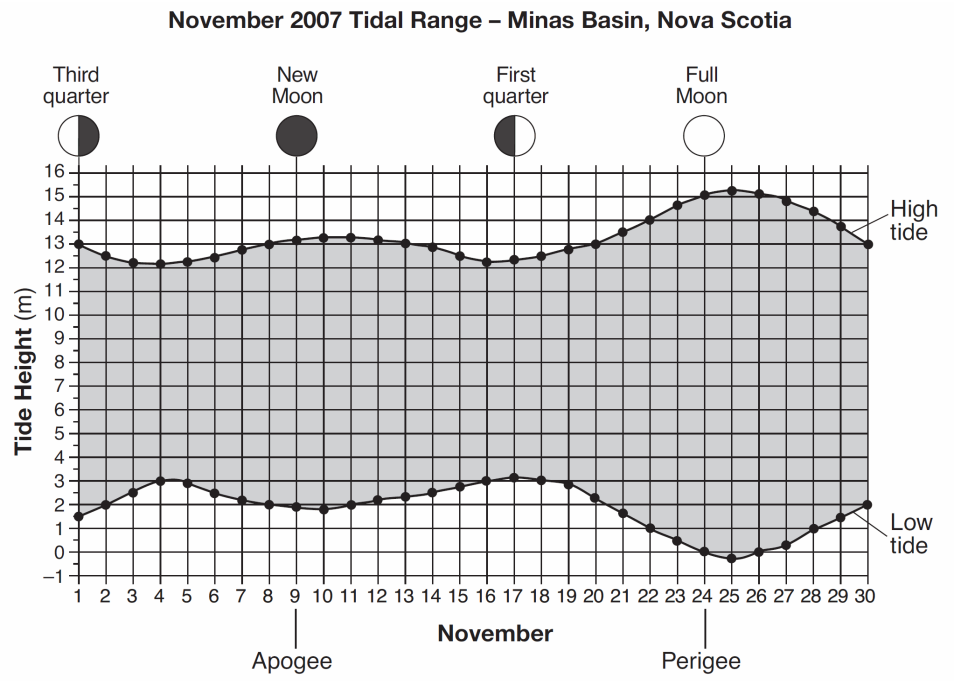
A) the Moon's rotation and Earth's rotation
B) the Moon's revolution and Earth's rotation
C) the Moon's rotation and the Sun's rotation
D) the Moon's revolution and the Sun's rotation

37. A solar eclipse might be observed from Earth when the Moon is at which position?

A) 1 B) 5 C) 3 D) 7

Base your answers to questions **38** and **39** on
the graph below and on your knowledge of Earth science.

The graph shows the tidal range (the difference between the highest tide and the lowest tide) recorded in Minas Basin, Nova Scotia, during November 2007. The phase of the Moon on selected days is shown above the graph. The dates that the Moon was farthest from Earth (apogee) and closest to Earth (perigee) are indicated under the graph.



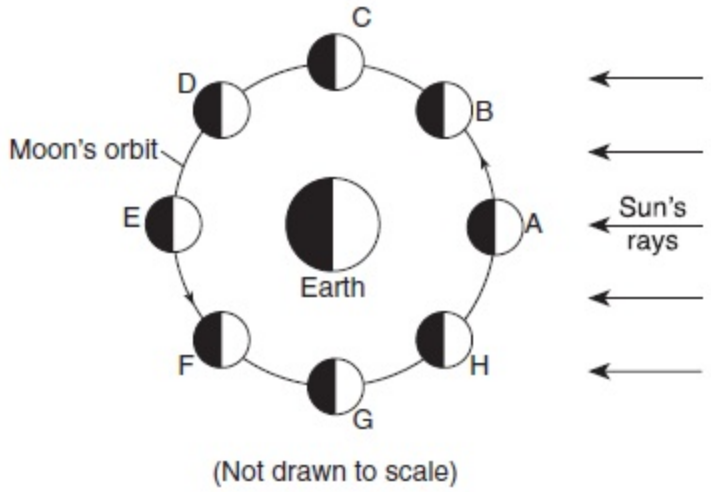
38. The next first-quarter Moon after November 17 occurred closest to

A) December 9 B) December 14 C) December 17 D) December 24

39. The highest high tides and the lowest low tides occurred when the Moon was near

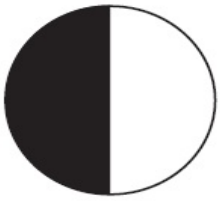
A) apogee and a new-Moon phase
B) apogee and a full-Moon phase
C) perigee and a new-Moon phase
D) perigee and a full-Moon phase

Base your answers to questions **40** and **41** on the diagram below and on your knowledge of Earth science. The diagram represents the Moon in eight positions, *A* through *H,* in its orbit around Earth.



40. Which Moon phase is observed in New York State when the Moon is located at position *F?*

A) 

B) 

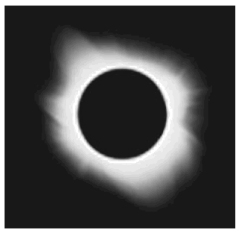
C) 

D) 

41. How many days are required for the Moon to complete a cycle of phases from the new Moon position represented in the diagram to the new Moon the following month?

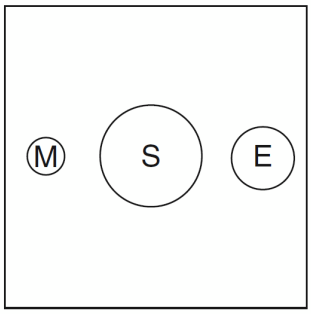
A) 2.2 d B) 27.3 d C) 29.5 d D) 365.26 d

42. The diagram below represents a total solar eclipse as seen from Earth.

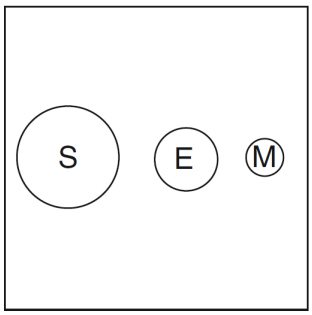


Which diagram correctly represents the relative positions of the Sun (*S*), Earth *(E),* and the Moon *(M)* in space during a total solar eclipse? [The diagrams are not drawn to scale.]

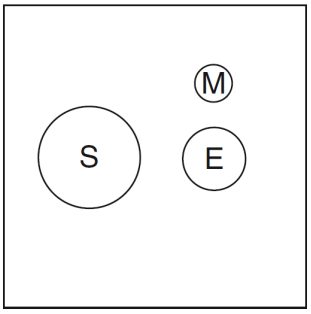
A)



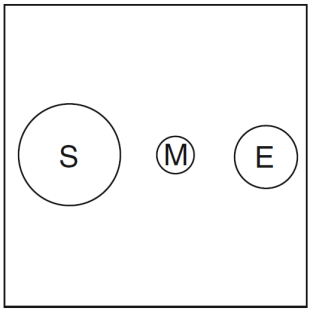
B)



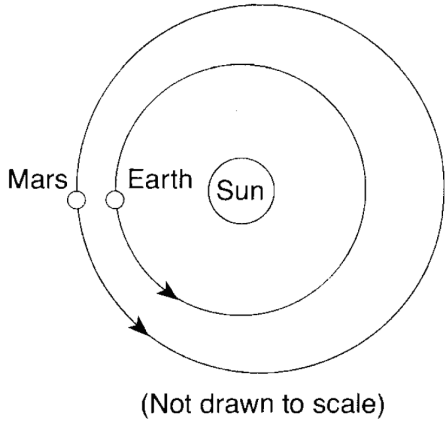
C)



D)

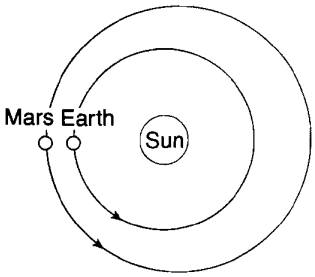


43. The diagram below shows the relative positions of Earth and Mars in their orbits on a particular date during the winter of 2007.

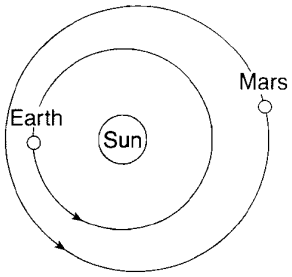


Which diagram correctly shows the locations of Earth and Mars on the same date during the winter of 2008?

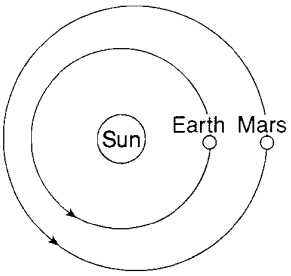
A)



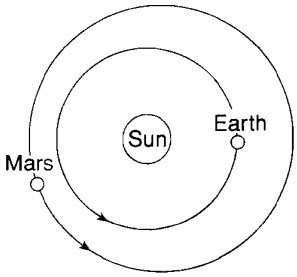
B)



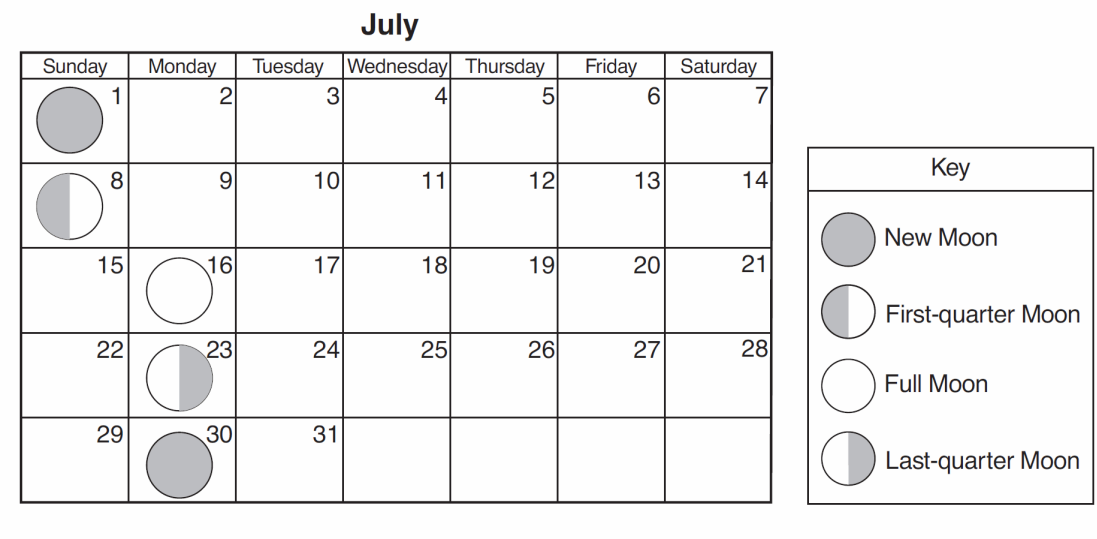
C)



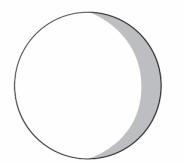
D)



Base your answers to questions **44** and **45** on the calendar below, which shows the month of July of a recent year. The dates of major Moon phases, as seen in New York State, are shown.



The diagram below represents the phase of the Moon observed from New York State one night during the month of July.



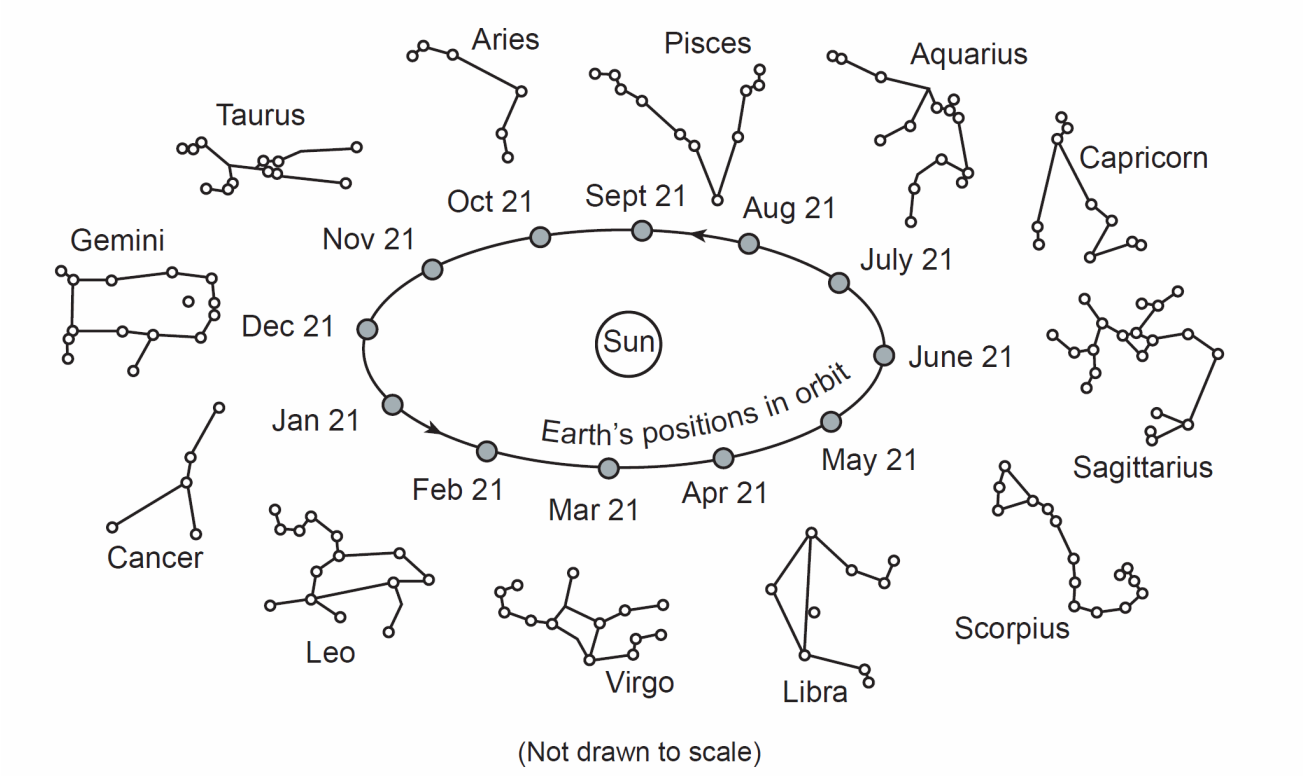
44. Why does the Moon's gravity have a greater effect on Earth's ocean tides than the Sun's gravity?

A) The Sun is composed mostly of gases.
B) The Sun's gravity influences more planets.
C) The Moon has a greater mass.
D) The Moon is much closer to Earth.

45. Eclipses do *not* occur every month because the Moon's

A) rate of rotation is 15° each hour
B) orbit is inclined to Earth's orbit
C) period of revolution is 27.3 days
D) period of rotation and period of revolution are the same

46. The diagram below represents positions of Earth in its orbit around the Sun and twelve constellations that can be seen in the midnight sky by an observer in New York State at different times of the year. The approximate locations of the constellations in relation to Earth's orbit are shown.



Which date is correctly paired with two constellations that can be seen in the sky at midnight?

A) May 21: Scorpius and Taurus
B) August 21: Libra and Virgo
C) November 21: Gemini and Capricorn
D) February 21: Leo and Cancer

47. At a location in the Northern Hemisphere, a camera was placed outside at night with the lens pointing straight up. The shutter was left open for four hours, resulting in the star trails shown below.

At which latitude were these star trails observed?

A) 1° N
B) 30° N
C) 60° N
D) 90° N

48. Base your answer to the following question on the data table below and on your knowledge of Earth Science. The data table shows some constellations that can be seen by an observer in New York State during different seasons.

Season	Constellations
spring	Ursa Minor, Orion, Leo, Scorpius
summer	Ursa Minor, Leo, Scorpius, Aquarius
fall	Ursa Minor, Orion, Scorpius, Aquarius
winter	Ursa Minor, Orion, Leo, Aquarius

The diagram below represents a portion of the constellation Ursa Minor is located almost directly

Ursa Minor can be seen by an observer in New York State during all four seasons because Ursa Minor is located almost directly

A) above Earth's equator
B) above Earth's North Pole
C) overhead in New York State
D) between Earth and the center of the Milky Way

49. Which sequence of stars is listed in order of increasing luminosity?

A) *Spica*, *Rigel*, *Deneb*, *Betelgeuse*
B) *Polaris*, *Deneb*, *40 Eridani B*, *Proxima Centauri*
C) *Barnard's Star*, *Alpha Centauri*, *Rigel*, *Spica*
D) *Procyon B*, *Sun*, *Sirius*, *Betelgeus*

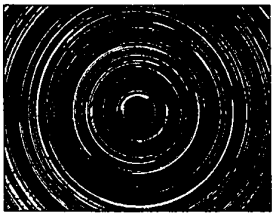
50. The spinning of Earth on its axis causes the apparent rising and setting of the

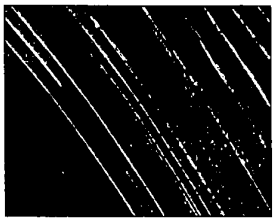
A) Sun, only
B) Sun and the Moon, only
C) Moon and some stars, only
D) Sun, the Moon, and some stars

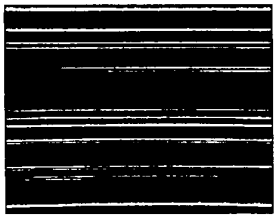
51. In New York State, the constellation Pisces can be seen in the night sky between the middle of summer and the middle of winter. The constellation Scorpio can be seen in the night sky between early spring and early fall. The reason these two constellations can be viewed only at these times is a direct result of Earth's

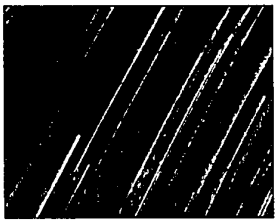
    A) spin on its axis
    B) movement around the Sun
    C) axis having a 23.5° tilt
    D) distance from the Sun

52. Which photograph of star trails was taken by an observer facing directly north in New Jersey?

    A) 

    B) 

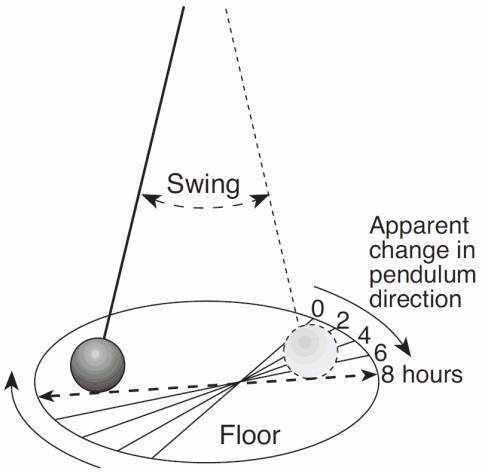
    C) 

    D) 

53. If the distance between the Earth and the Sun were increased, which change would occur?

    A) The apparent diameter of the Sun would decrease.
    B) The amount of insolation received by the Earth would increase.
    C) The time for one Earth rotation (rotation period) would double.
    D) The time for one Earth revolution (orbital period) would decrease.

54. The diagram below shows a large pendulum in motion over an 8-hour period.



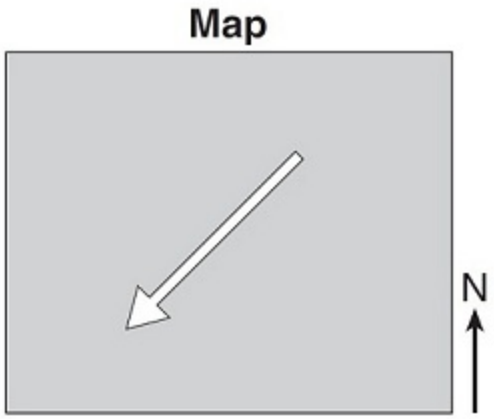
What is the main reason the pendulum appears to change its direction of swing over time?

    A) tilt of Earth on its axis
    B) rotation of Earth on its axis
    C) revolution of Earth in its orbit
    D) speed of Earth in its orbit

55. The best evidence of Earth's rotation is provided by the

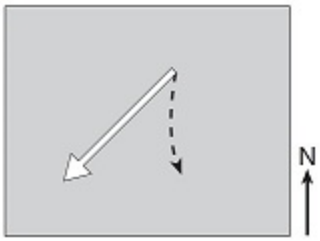
    A) shape of Earth's orbit
    B) shape of the Milky Way galaxy
    C) changes in the total yearly duration of insolation at a location on Earth
    D) apparent changes in the direction of swing of a Foucault pendulum

56. The arrow on the map below represents the direction a wind is blowing over a land surface in the Northern Hemisphere *without* showing the Coriolis effect.

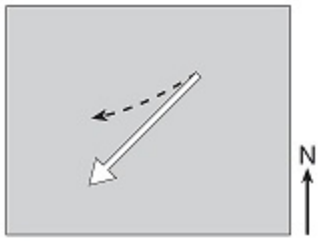


Which dashed arrow represents how the wind direction will change in the Northern Hemisphere due to the Coriolis effect?

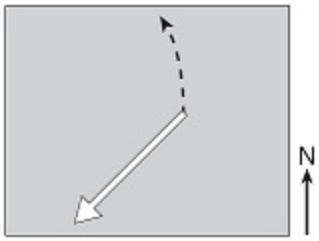
A)



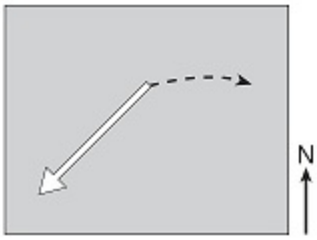
B)



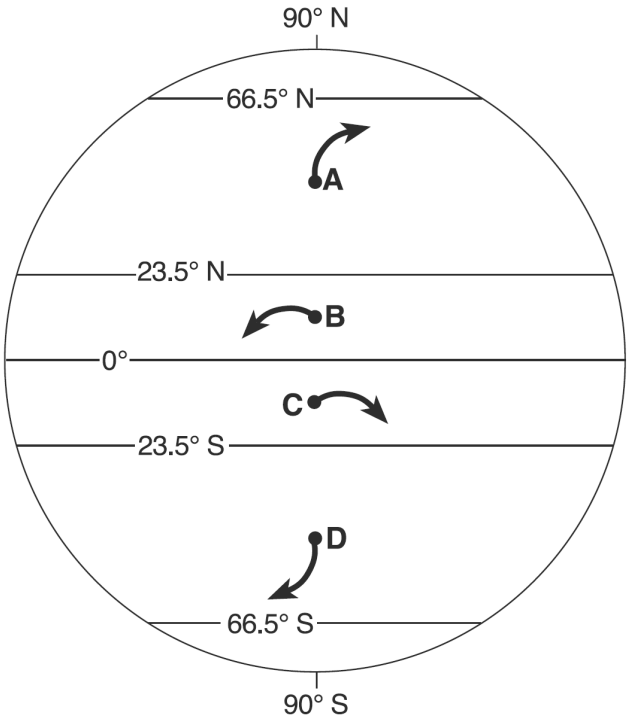
C)



D)



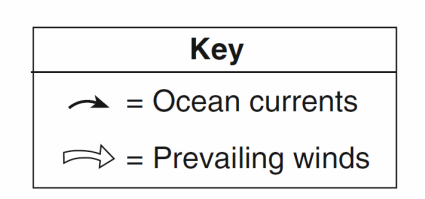
57. The arrows in the diagram below show changes in the direction of surface winds at four lettered locations, *A*, *B*, *C*, and *D*, on Earth.



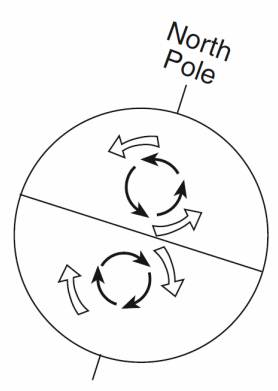
The arrow at which location correctly shows a deflection of the wind that could be due to the Coriolis effect?

A) *A* B) *B* C) *C* D) *D*

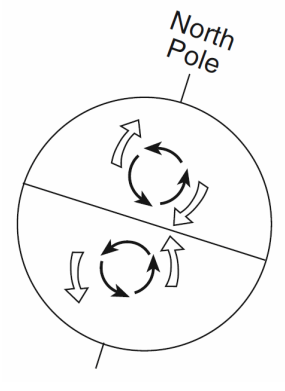
58. Which diagram correctly represents the curving of Earth's ocean currents and prevailing winds due to the Coriolis effect?



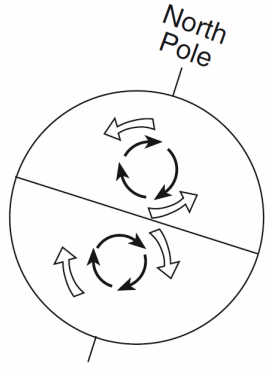
A)



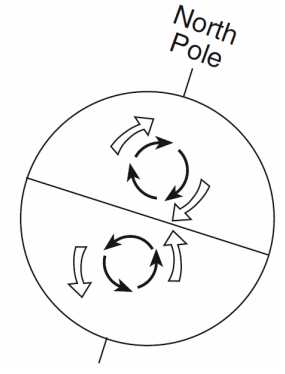
B)



C)



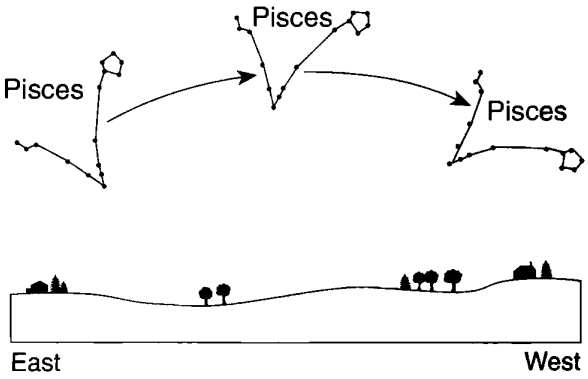
D)



59. If Earth's rate of rotation increases, the length of one Earth day will be

A) shorter than 24 hours
B) longers than 24 hours
C) 24 hours, with a shorter nighttime period
D) 24 hours, with a longer nighttime period

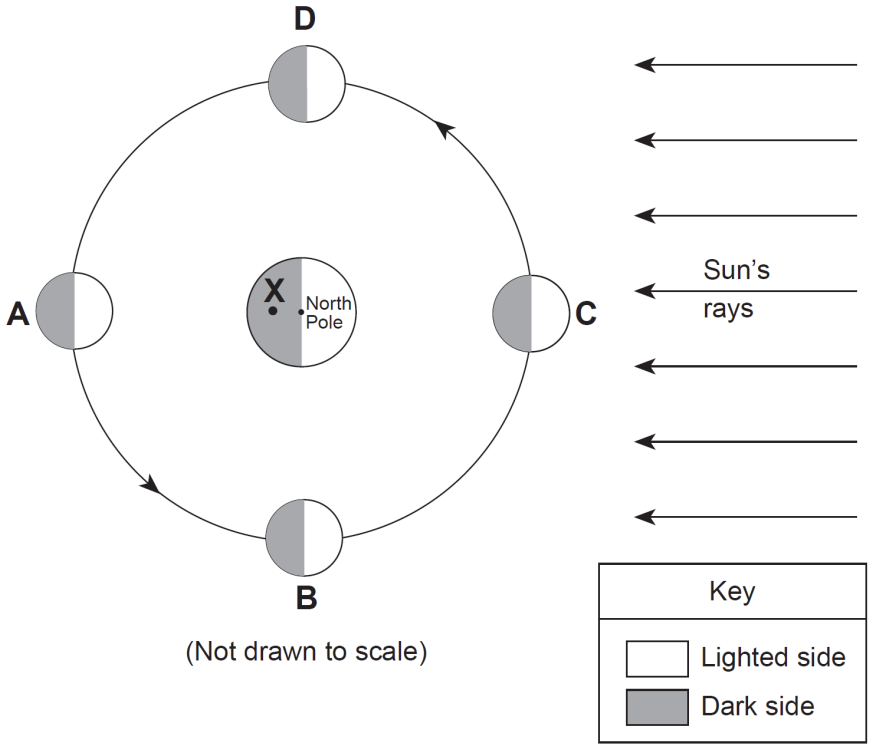
60. The constellation Pisces changes position during a night, as shown in the diagram below.



Which motion is mainly responsible for this change in position?

A) revolution of Earth around the Sun
B) rotation of Earth on its axis
C) revolution of Pisces around the Sun
D) rotation of Pisces on its axis

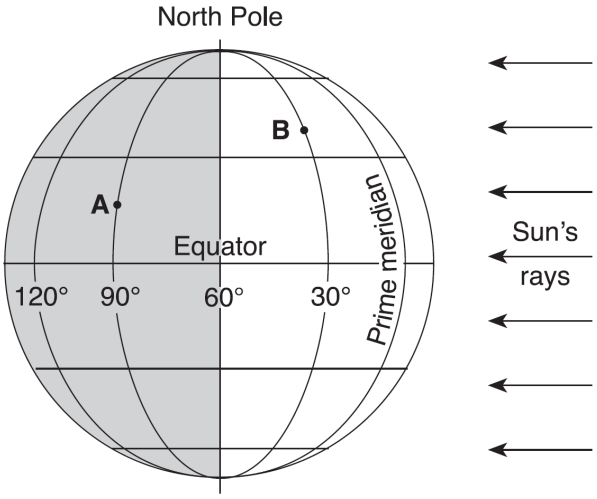
61. Base your answer to the following question on the diagram below, which shows Earth and the Moon in relation to the Sun. Positions *A*, *B*, *C*, and *D* show the Moon at specific locations in its orbit. Point *X* is a location on Earth's surface.



What is the time of day at point *X*?

A) 6 a.m. B) noon C) 6 p.m. D) midnight

62. The diagram below shows the latitude and longitude lines on Earth. Points *A* and *B* are locations on Earth's surface.



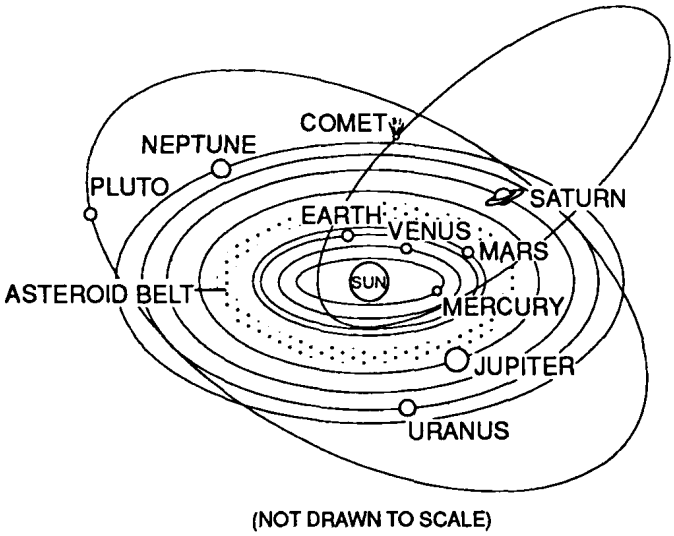
If it is 4 a.m. at location *A*, what time is it at location *B*?

A) 10 a.m. B) 2 a.m.
C) 6 a.m. D) 8 a.m.

63. Which apparent motion can be explained by a geocentric model?

A) deflection of the wind
B) curved path of projectiles
C) motion of a Foucault pendulum
D) the sun's path through the sky

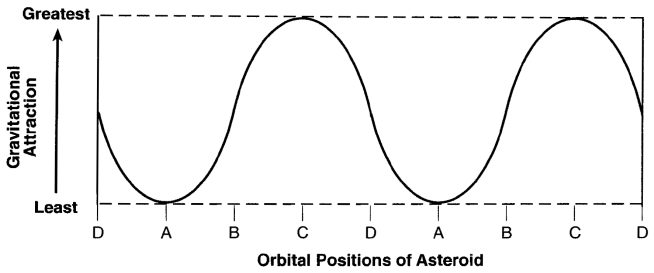
64. The diagram below represents our solar system.



This system is best classified as

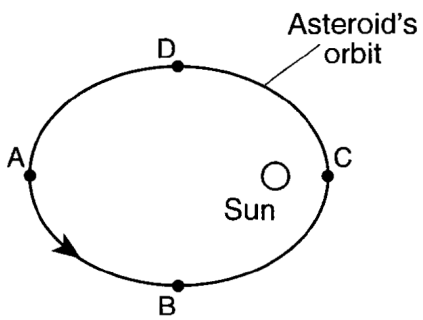
A) geocentric, with elliptical orbits
B) geocentric, with circular orbits
C) heliocentric, with elliptical orbits
D) heliocentric, with circular orbits

65. The graph below shows the varying amount of gravitational attraction between the Sun and an asteroidinour solar system. Letters *A, B, C, and D indicate four positions in the asteroid's orbit.*][]

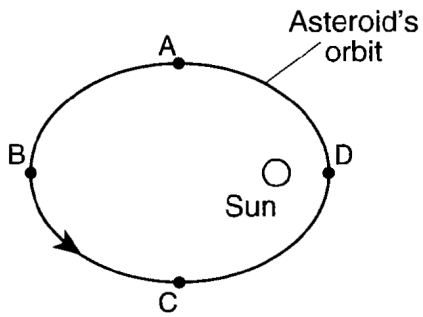


Which diagram best represents the positions of the asteroid in its orbit around the Sun? [Note: The diagrams are not drawn to scale.]

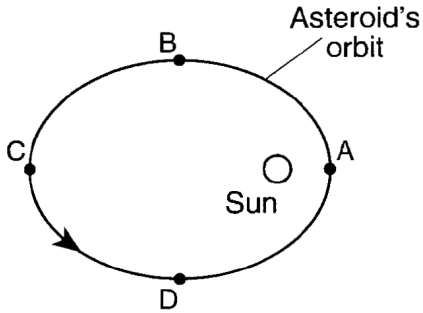
A)



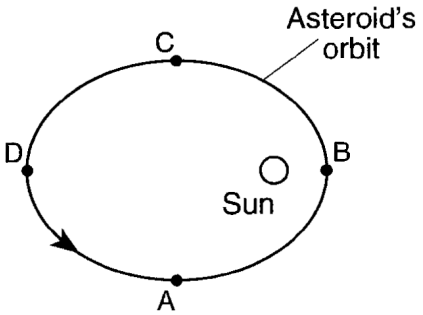
B)



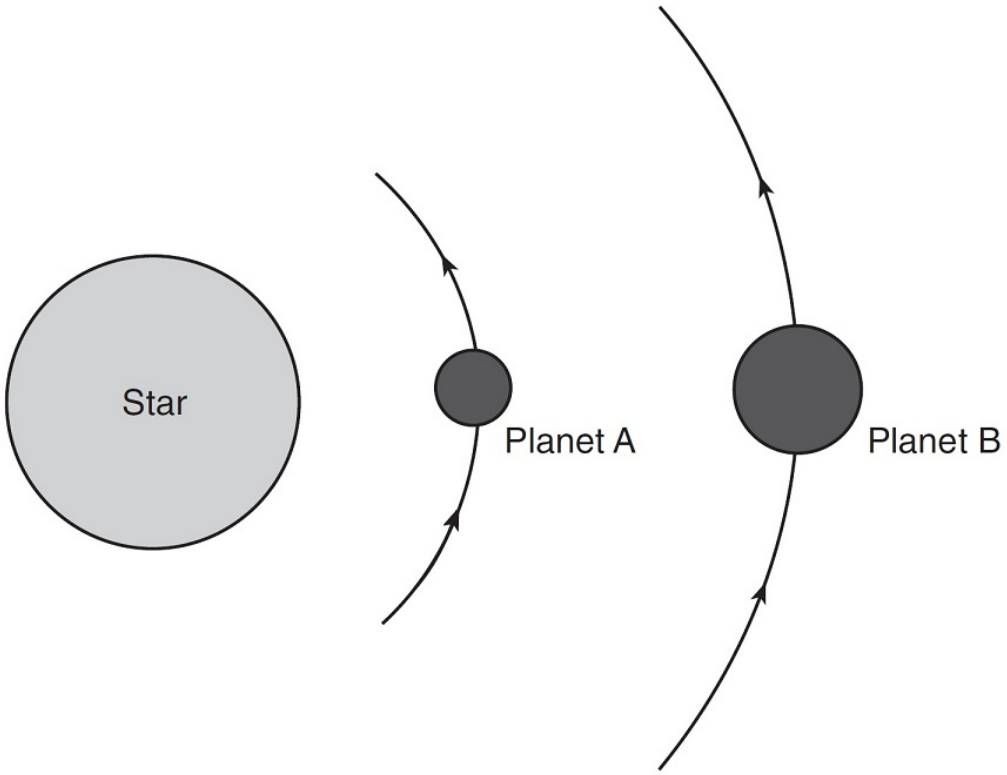
C)



D)



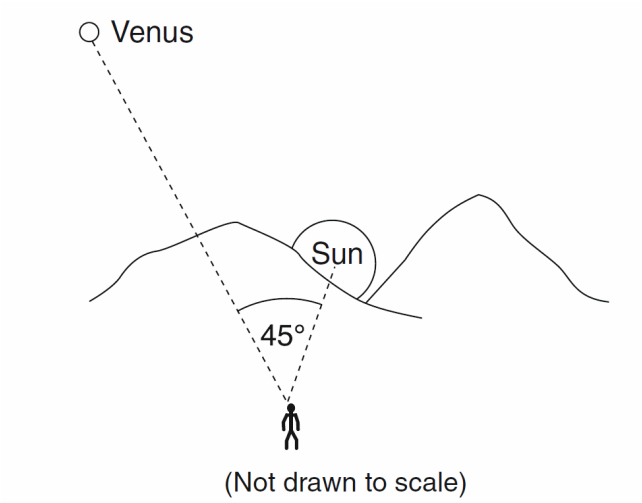
66. The diagram below represents planets *A* and *B,* of equal mass, revolving around a star.



Compared to planet *A,* planet *B* has a

A) weaker gravitational attraction to the star and a shorter period of revolution
B) weaker gravitational attraction to the star and a longer period of revolution
C) stronger gravitational attraction to the star and a shorter period of revolution
D) stronger gravitational attraction to the star and a longer period of revolution

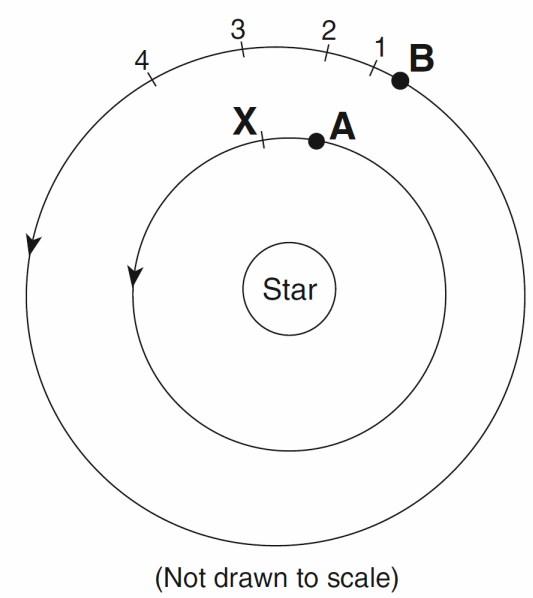
67. An observer on Earth measures the angle of sight between Venus and the setting Sun.



Which statement best describes and explains the apparent motion of Venus over the next few hours?

A) Venus will set 1 hour after the Sun because Earth rotates at 45° per hour.
B) Venus will set 2 hours after the Sun because Venus orbits Earth faster than the Sun orbits Earth.
C) Venus will set 3 hours after the Sun because Earth rotates at 15° per hour.
D) Venus will set 4 hours after the Sun because Venus orbits Earth slower than the Sun orbits Earth.

Base your answers to questions **68** and **69** on the diagram below, which represents the current locations of two planets, *A* and *B*, orbiting a star. Letter *X* indicates a position in the orbit of planet *A*. Numbers 1 through 4 indicate positions in the orbit of planet *B*.



68. If the diagram represents our solar system and planet *B* is Venus, which planet is represented by planet *A*?

A) Mercury B) Jupiter C) Earth D) Mars

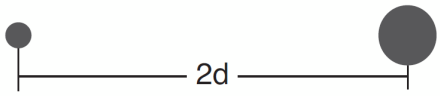
69. As planet *A* moves in orbit from its current location to position *X*, planet *B* most likely moves in orbit from its current location to position

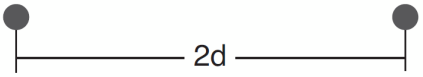
A) 1 B) 2 C) 3 D) 4

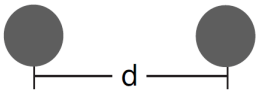
70. The symbols below represent star masses and distances.

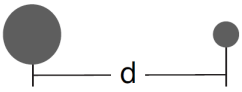
●	represents a star with a mass the same as the Sun's mass
⬤	represents a star with a mass greater than the Sun's mass
d	represents a certain distance between star centers
2d	represents twice the distance between star centers

Which diagram shows two stars that have the greatest gravitational force between them?

A)


B)


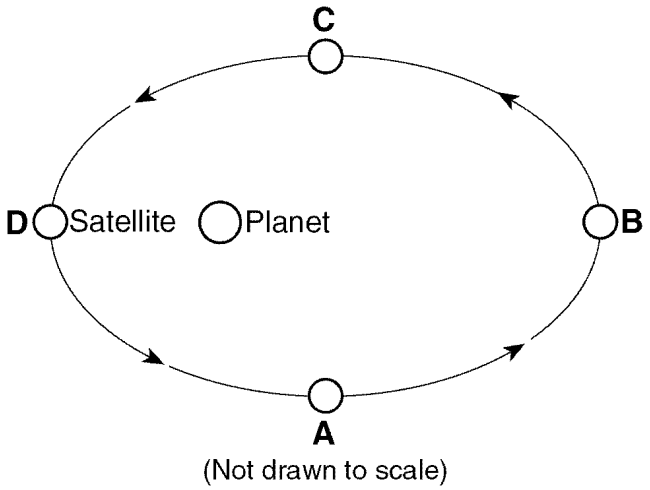
C)


D)


71. If the **average distance** between Earth and the Sun were **doubled**, what changes would occur in the Sun's gravitational pull on Earth and Earth's period of revolution?

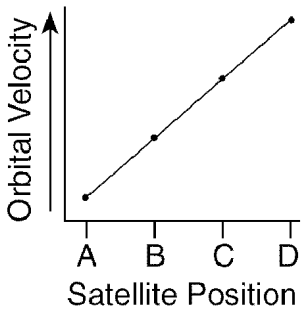
A) Gravitational pull would decrease and period of revolution would increase.
B) Gravitational pull would decrease and period of revolution would decrease.
C) Gravitational pull would increase and period of revolution would increase.
D) Gravitational pull would increase and period of revolution would decrease.

72. The diagram below shows a satellite in four different positions as it revolves around a planet.

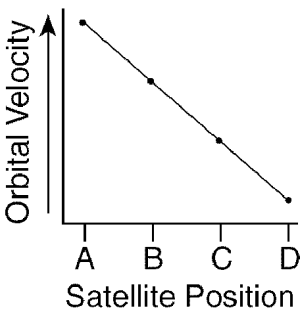


Which graph best represents the changes in this satellite's orbital velocity as it revolves around the planet?

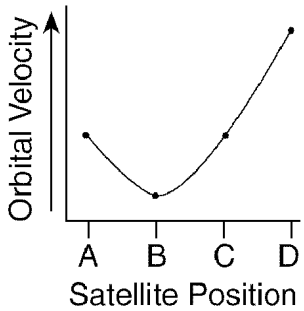
A)



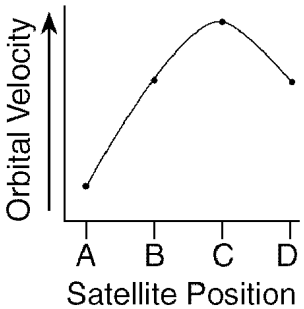
B)



C)

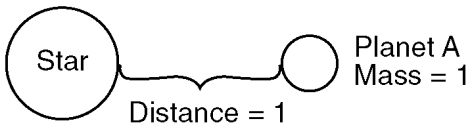


D)

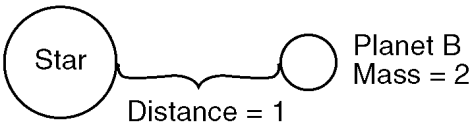


73. In each diagram below, the mass of the star is the same. In which diagram is the force of gravity greatest between the star and the planet shown?

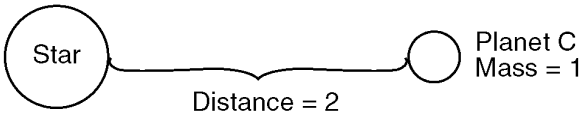
A)



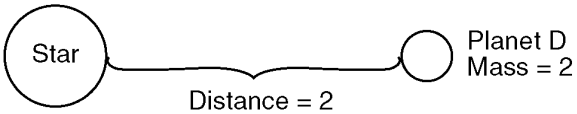
B)



C)



D)



74. Compared to the size and density of Earth, the Moon has a

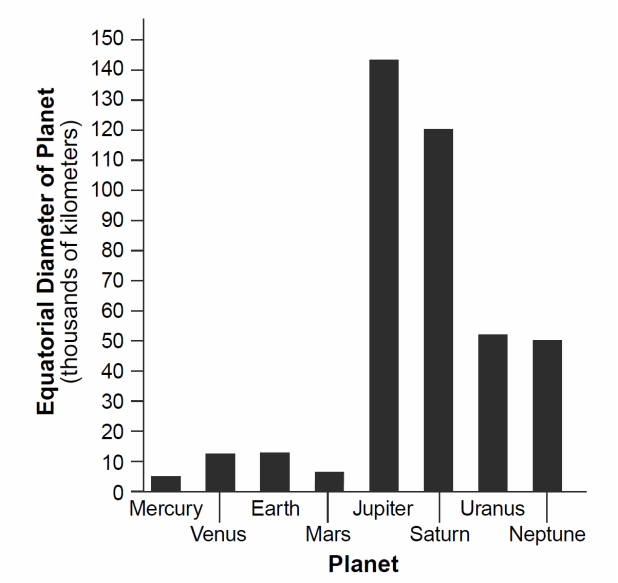
    A) smaller diameter and lower density
    B) smaller diameter and higher density
    C) larger diameter and lower density
    D) larger diameter and higher density

75. Which two characteristics do all Jovian planets have in common?

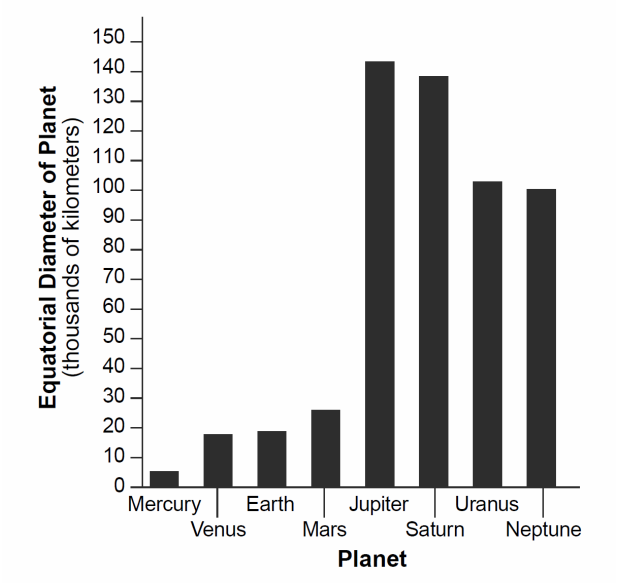
    A) small diameters and low densities
    B) small diameters and high densities
    C) large diameters and low densities
    D) large diameters and high densities

76. Which bar graph best represents the equatorial diameters of the eight planets of our solar system?

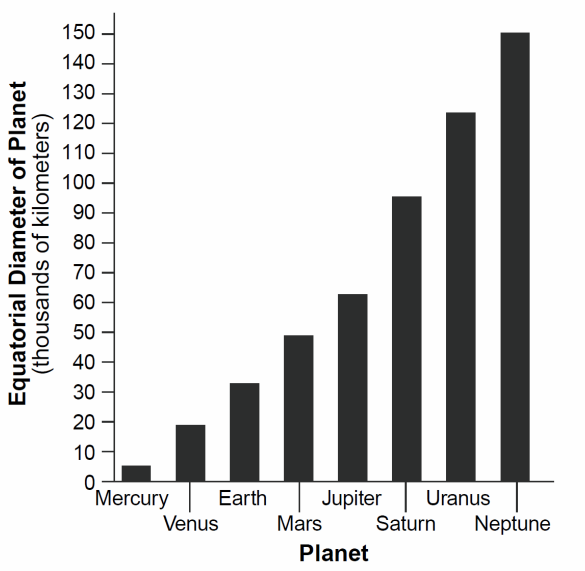
A)



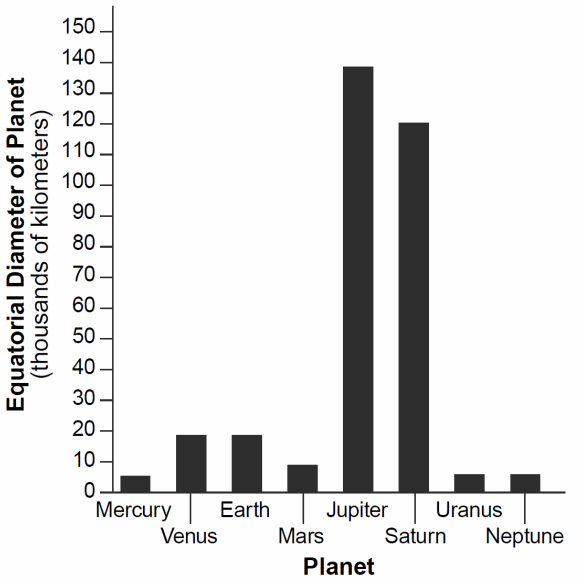
B)



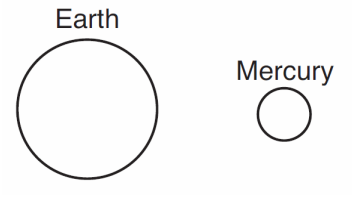
C)

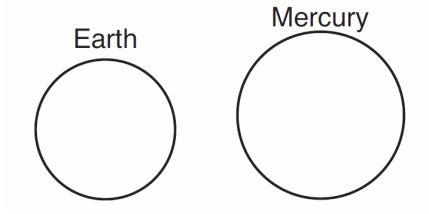


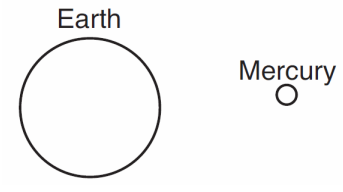
D)

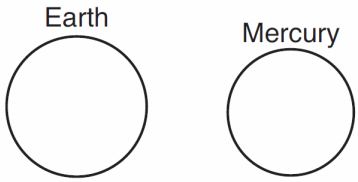


77. Which diagram most accurately represents the relative diameters of Earth and Mercury?

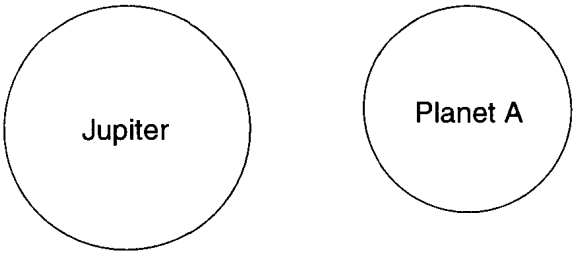
A)


B)


C)


D)


78. The diagram below represents two planets in our solar system drawn to scale, Jupiter and planet *A*.



Planet *A* most likely represents

A) Earth B) Venus
C) Saturn D) Uranus

Base your answers to questions **79** and **80** on the diagrams below. The diagrams represent the events that occur when a large meteor, such as the one believed to have caused the extinction of many organisms, impacts Earth's surface. Diagram *A* shows the meteor just before impact. Diagram *B* represents the crater forming, along with the vapor and ejecta (the fragmented rock and dust) thrown into the atmosphere.

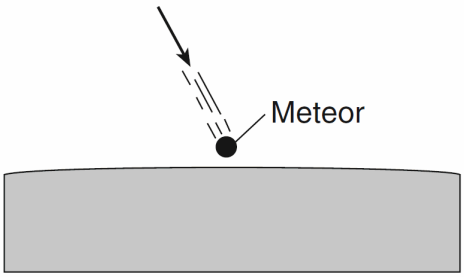


Diagram A: Before Impact

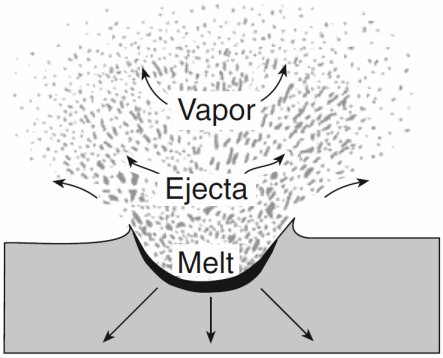


Diagram B: During Impact

79. Many meteors are believed to be fragments of celestial objects normally found between the orbits of Mars and Jupiter. These objects are classified as

A) stars B) asteroids C) planets D) moons

80. Which statement best explains how global climate would most likely be affected after this large meteor impact?

    A) Large quantities of ejecta in the atmosphere would block insolation and lower global temperatures.
    B) An increase in vapor and ejecta would allow radiation to escape Earth's atmosphere and lower global temperatures.
    C) Ejecta settling in thick layers would increase the absorption of insolation by Earth's surface and raise global temperatures.
    D) Forest fires produced from the vapor and ejecta would raise global temperatures.

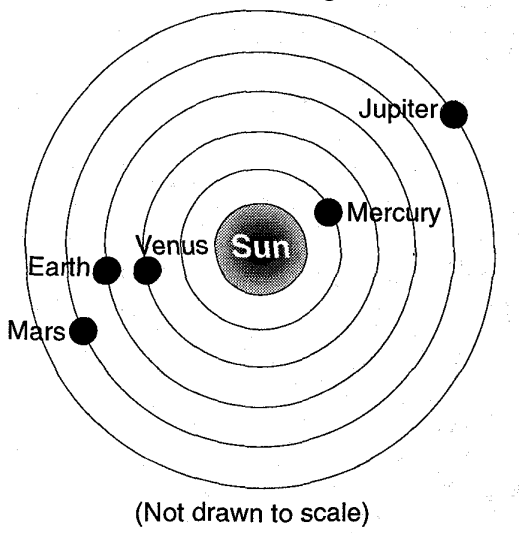
81. Which event occurred approximately 4.6 billion years ago?

    A) evolution of the earliest fish
    B) evolution of stromatolites
    C) formation of the oldest known Earth rocks
    D) formation of Earth and our solar system

82. The atmosphere of Venus is composed primarily of

    A) hydrogen and helium
    B) carbon dioxide
    C) methane
    D) ammonia

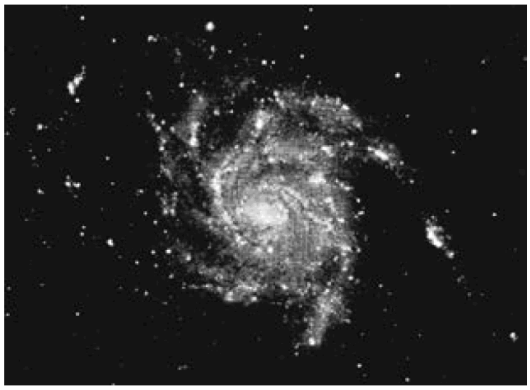
83. The diagram below shows several planets at various positions in their orbits at a particular time.



Which planet would be visible from the Earth at night for the longest period of time when the planets are in these positions?

A) Mercury B) Venus
C) Mars D) Jupiter

84. The photograph below shows a feature of the universe as seen through a telescope.



This feature is best identified as

A) a galaxy B) a comet
C) an asteroid D) a star

85. Fourteen billion years represents the approximate age of

    A) Earth B) Earth's Moon
    C) our solar system D) the universe

86. A red shift in the light from very distant galaxies suggests that the universe is

    A) fixed and stationary
    B) moving randomly
    C) contracting
    D) expanding

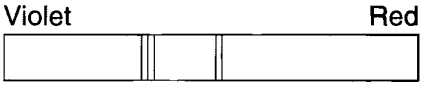
87. Which evidence best supports the Big Bang theory?

    A) rate of rotation of the Sun
    B) existence of cosmic background radiation
    C) uniform radioactive decay of uranium-238
    D) separation of Earth's interior into different layer

88. Which sequence correctly lists the relative sizes from smallest to largest?

    A) our solar system, universe, Milky Way Galaxy
    B) our solar system, Milky Way Galaxy, universe
    C) Milky Way Galaxy, our solar system, universe
    D) Milky Way Galaxy, universe, our solar system

89. The diagram below represents the bright-line spectrum for an element.

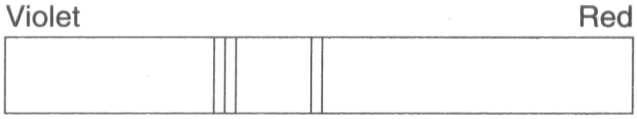


The spectrum of the same element observed in the light from a distant star is shown below.

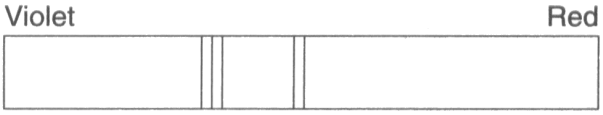
The shift in the spectral lines indicates that the star is moving

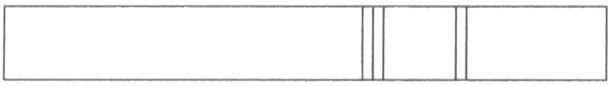
    A) toward Earth
    B) away from Earth
    C) in an elliptical orbit around the Sun
    D) in a circular orbit around the Sun

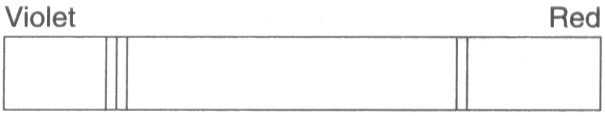
90. The diagram below shows the spectral lines for an element.

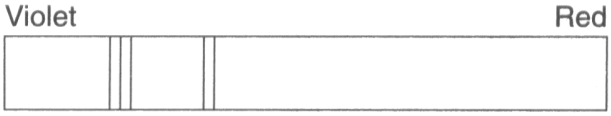


Which diagram best represents the spectral lines of this element when its light is observed coming from a star that is moving away from Earth?

A) 

B) 

C) 

D) 

91. Astronomers viewing light from distant galaxies observe a shift of spectral lines toward the red end of the visible spectrum. This shift provides evidence that

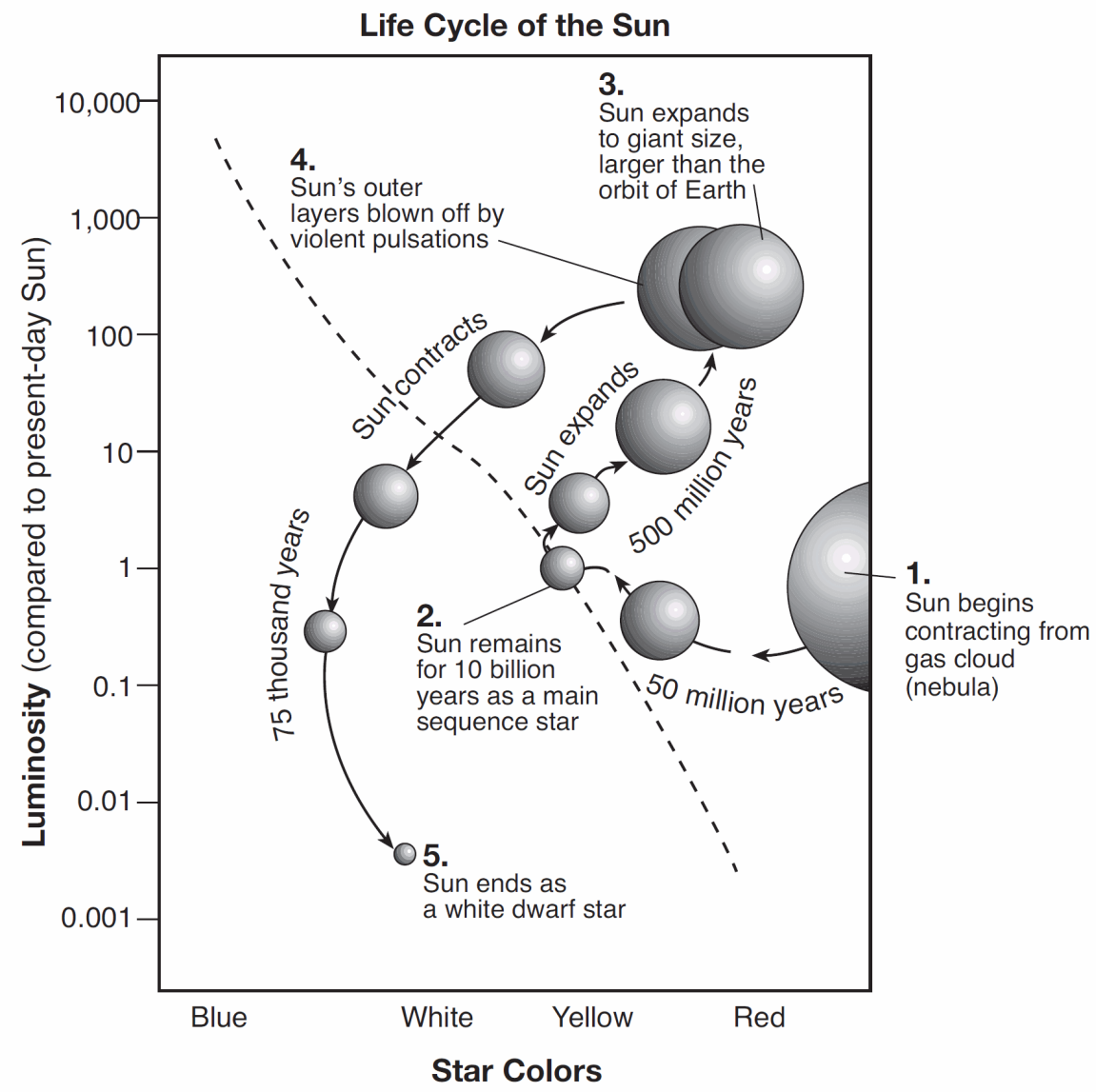
    A) orbital velocities of stars are decreasing
    B) Earth's atmosphere is warming
    C) the Sun is cooling
    D) the universe is expanding

92. Which star is more massive than our Sun, but has a lower surface temperature?

    A) *40 Eridani B* B) *Sirius*
    C) *Aldebaran* D) *Barnard's Star*

Base your answers to questions **93** and **94** on the diagram below and on your knowledge of Earth science.

The diagram represents the inferred changes to the luminosity and color of the Sun throughout its life cycle. The diagonal dashed line represents the main sequence stars. The numbers 1 through 5 represent stages in the life cycle of the Sun.



93. For other stars in our galaxy that go through a similar life cycle to our Sun, which star is currently in the late stage of its life cycle?

A) *Alpha Centauri* B) *Procyon B*
C) *Barnard's Star* D) *Polaris*

94. The Sun is inferred to be the most luminous when it is classified as a

A) white dwarf star B) gas cloud (nebula)
C) main sequence star D) giant star

95. The reaction below represents an energy-producing process.

Hydrogen (lighter element)	+	Hydrogen (lighter element)	→	Helium (heavier element)	+	Energy

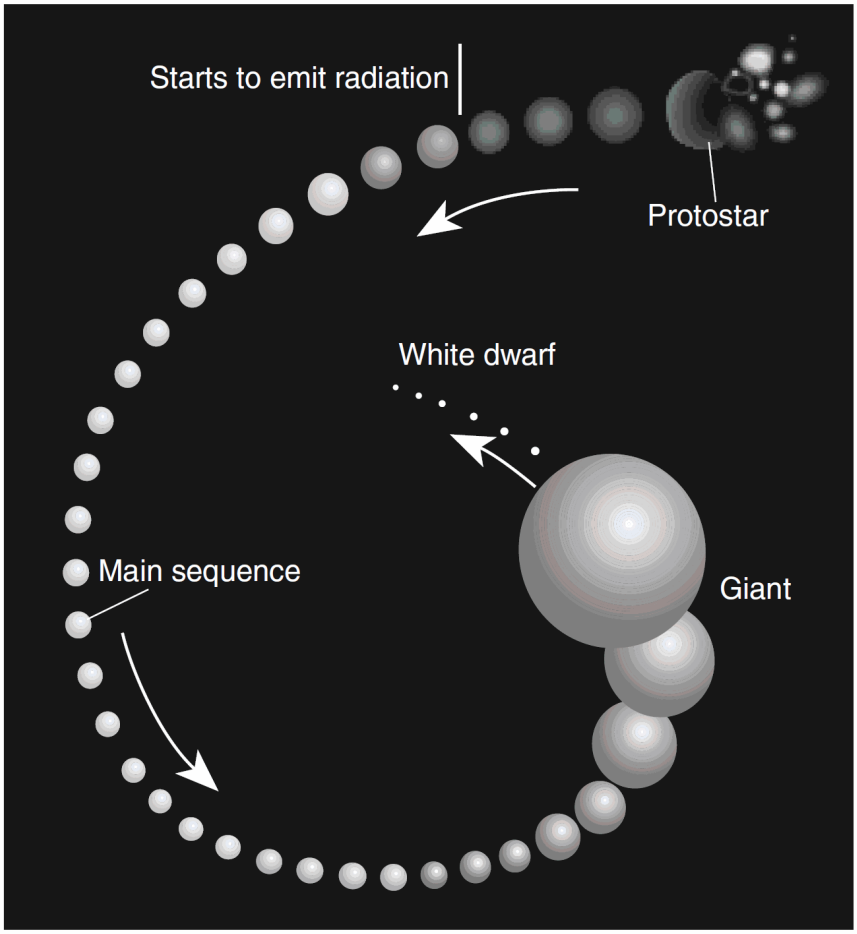
The reaction represents how energy is produced

A) in the Sun by fusion
B) when water condenses in Earth's atmosphere
C) from the movement of crustal plates
D) during nuclear decay

96. Compared with our Sun, the star *Betelgeuse* is

A) smaller, hotter, and less luminous
B) smaller, cooler, and more luminous
C) larger, hotter, and less luminous
D) larger, cooler, and more luminous

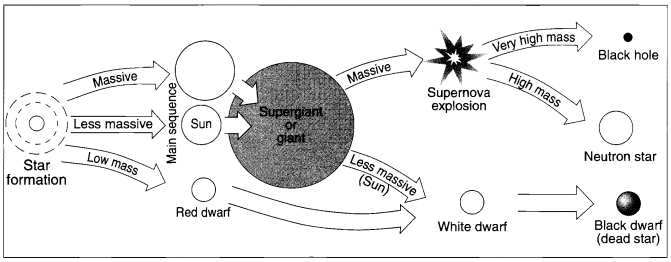
97. Base your answer to the following question on the diagram below, which shows the change in the size of a star such as our Sun as it evolves from a protostar to a white dwarf star.



Which process produces the energy radiated by the star when it becomes a main sequence star?

A) radioactive decay
B) nuclear fusion
C) conduction
D) convection

98. The diagram below represents possible stages in the life cycle of stars.



(Not drawn to scale)

Which star has the greatest probability of producing a supernova explosion?

A) *Barnard's Star* B) *Betelgeuse*
C) *Procyon B* D) *Sun*

99. By which process do stars convert mass into great amounts of energy?

A) nuclear fusion B) heat transfer
C) gravitational pull D) radioactive decay

100. The probable fate of our sun is

A) to expand as a red giant, undergo a nova outburst and end as a white dwarf
B) to shrink to a white dwarf then eventually expand to a red giant
C) become hotter and expand into a blue supergiant
D) to become a black hole