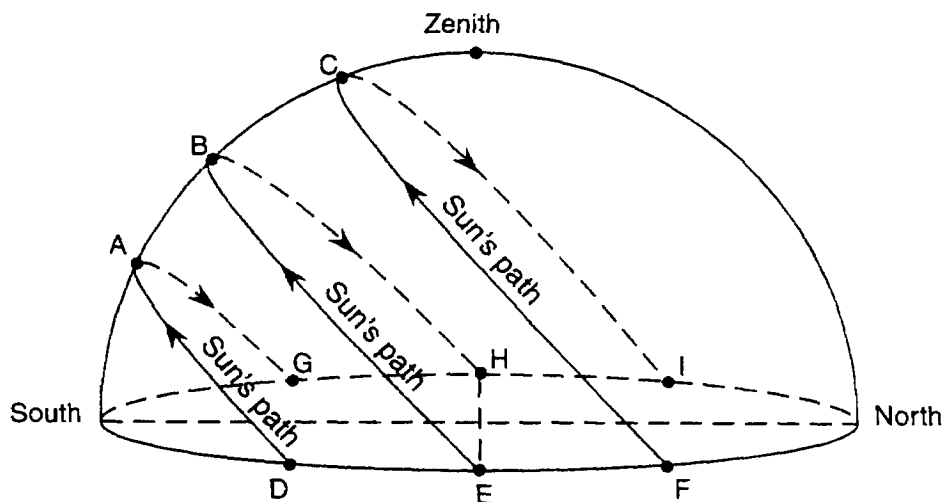


1. How long does Earth take to complete one orbit around the Sun?
(A) 1 day (C) 1 year
(B) 1 month (D) 1 decade
2. Summer days in New York State are likely to be hotter than winter days because in summer
(A) Earth is closer to the Sun
(B) the Sun gives off more energy
(C) Earth's northern axis is tilted toward the Sun
(D) the number of sunspots increases
3. Which event is a direct result of Earth's revolution?
(A) the daily rising and setting of the Sun
(B) the changing of the Moon phases
(C) the seasonal changes in constellations viewed in the night sky
(D) the apparent deflection of winds
4. A student read in a newspaper that the maximum length of the daylight period for the year in Syracuse, New York, had just been reached. What was the date of this newspaper?
(A) June 22 (C) September 22
(B) December 22 (D) March 22
5. During which season in the Northern Hemisphere is the Earth closest to the Sun?
(A) spring (C) fall
(B) winter (D) summer
6. Which location on the Earth would the Sun's vertical rays strike on December 21?
(A) Tropic of Cancer ($23\frac{1}{2}^{\circ}$ N)
(B) Equator (0°)
(C) Tropic of Capricorn ($23\frac{1}{2}^{\circ}$ S)
(D) South Pole (90° S)
7. Approximately how many degrees does the Earth rotate on its axis in 1 hour?
(A) 1° (C) 24°
(B) 15° (D) 360°

Seasons Practice Test

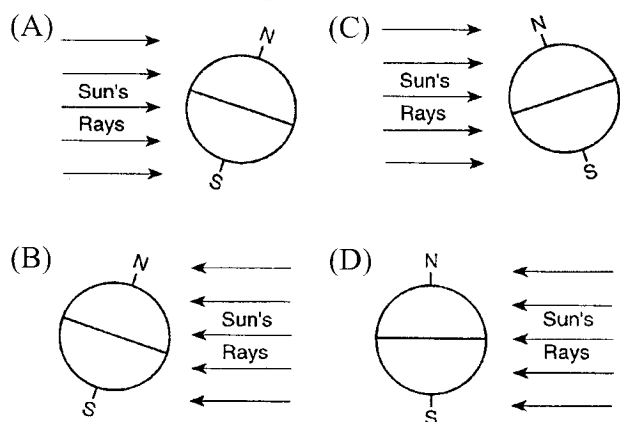
8. The diagram below represents a plastic hemisphere upon which lines have been drawn to show the apparent paths of the Sun at a location in New York State on the first day of each season. Letters *A* through *I* represent points on the paths.



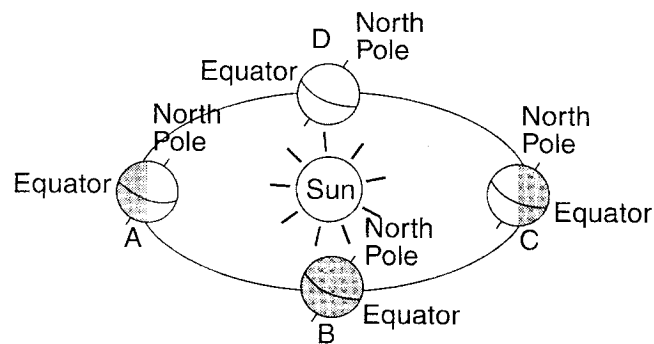
Which point represents the sunrise location on the first day of winter?

- (A) *G* (B) *F* (C) *E* (D) *D*

9. Which diagram shows the position of the Earth relative to the Sun's rays during a winter day in the Northern Hemisphere?



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



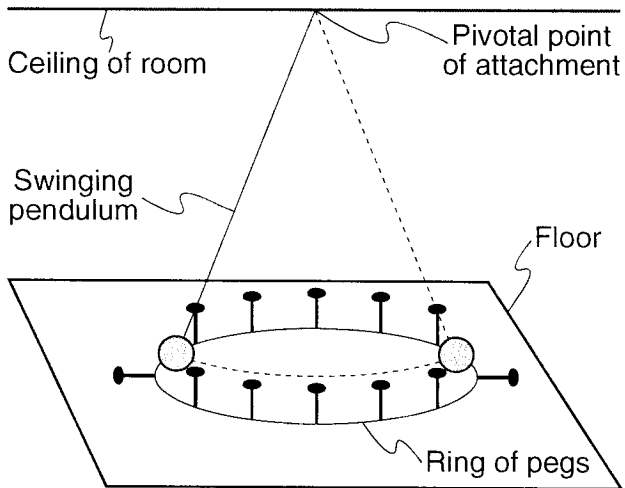
(Not drawn to scale)

Between which positions would New York State be experiencing the summer season?

- (A) *D* and *A* (C) *C* and *D*
 (B) *B* and *C* (D) *A* and *B*

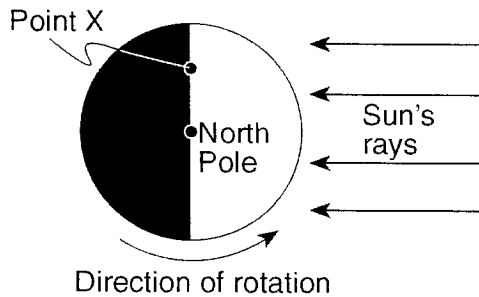
10. In the Northern Hemisphere, planetary winds blowing from north to south are deflected, or curved, toward the west. This deflection is caused by the
- (A) unequal heating of land and water surfaces
 (B) movement of low-pressure weather systems
 (C) spinning of Earth on its axis
 (D) orbiting of Earth around the Sun

12. The diagram below represents a swinging Foucault pendulum.



This pendulum will show an apparent change in the direction of its swing due to Earth's

- (A) rotation (C) revolution
 (B) curved surface (D) tilted axis
13. The length of an Earth year is based on Earth's
- (A) revolution of approximately $1^\circ/\text{day}$
 (B) rotation of $15^\circ/\text{hr}$
 (C) rotation of approximately $1^\circ/\text{day}$
 (D) revolution of $15^\circ/\text{hr}$
14. The diagram below represents the direction of Earth's rotation as it appears from above the North Pole. Point X is a location on Earth's surface.

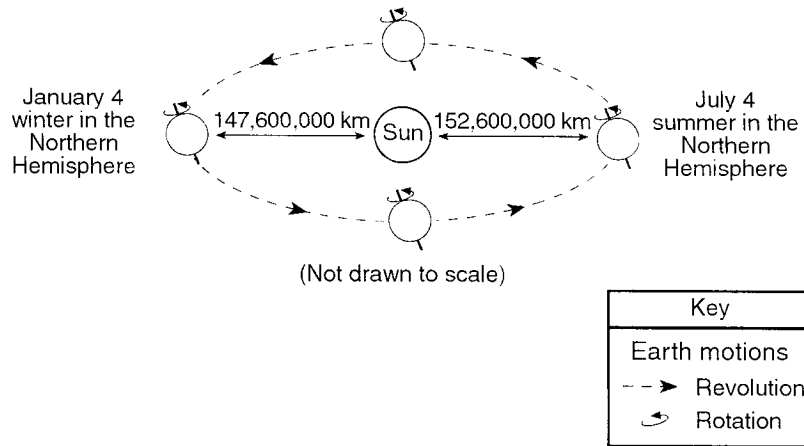


The time at point X is closest to

- (A) 6 a.m. (C) 6 p.m.
 (B) 12 noon (D) 12 midnight

Seasons Practice Test

15. Base your answer to the following question on the diagram below, which shows a model of Earth's orbit around the Sun. Two motions of Earth are indicated. Distances to the Sun are given for two positions of Earth in its orbit.



On the diagram above, place an **X** on Earth's orbit to indicate Earth's position on May 21.

Seasons Practice Test

Base your answers to questions 16 through 18 on diagram 1 and diagram 2 below, which show some constellations in the night sky viewed by a group of students. Diagram 1 below shows the positions of the constellations at 9:00 p.m. Diagram 2 below shows their positions two hours later.

Diagram 1 — 9:00 p.m.

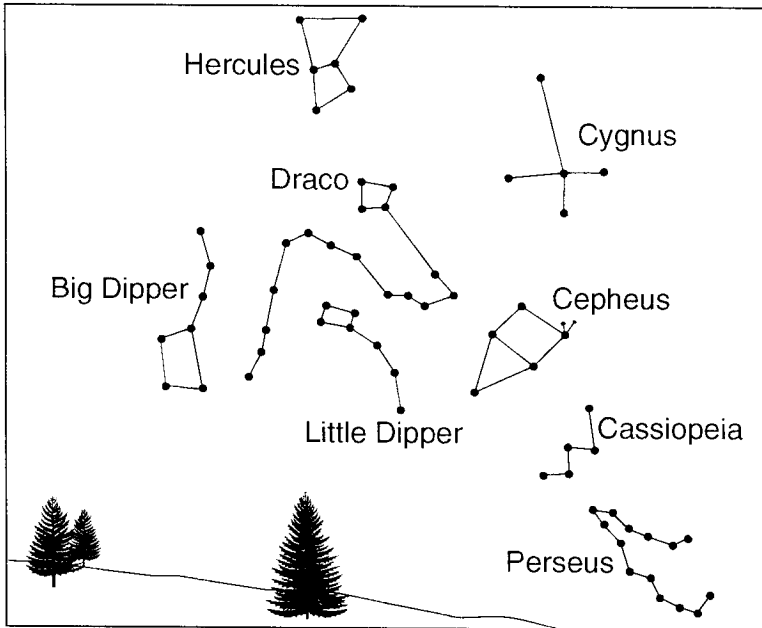
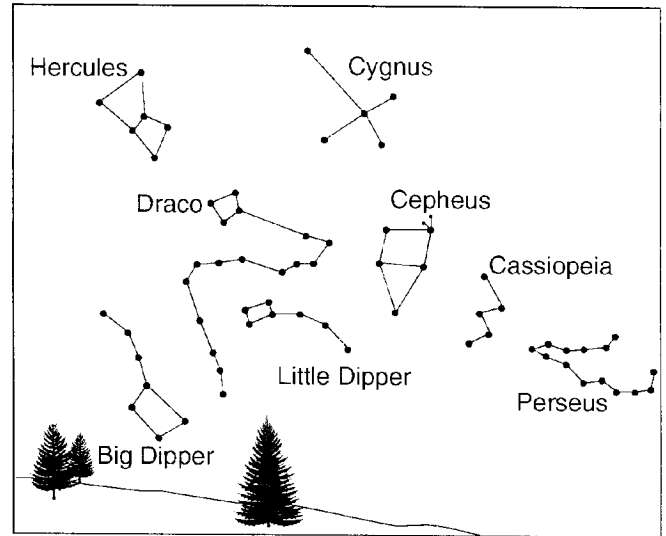


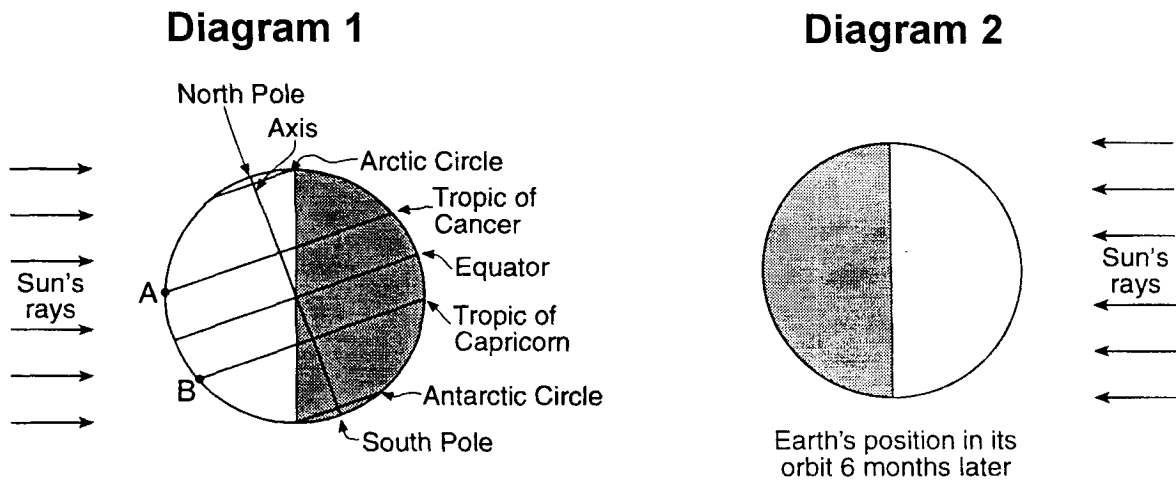
Diagram 2 — 11:00 p.m.



16. Circle *Polaris* on diagram 2 provided above.
17. In which compass direction were the students facing?
18. Describe the apparent direction of movement of the constellations Hercules and Perseus during the two hours between student observations.

Seasons Practice Test

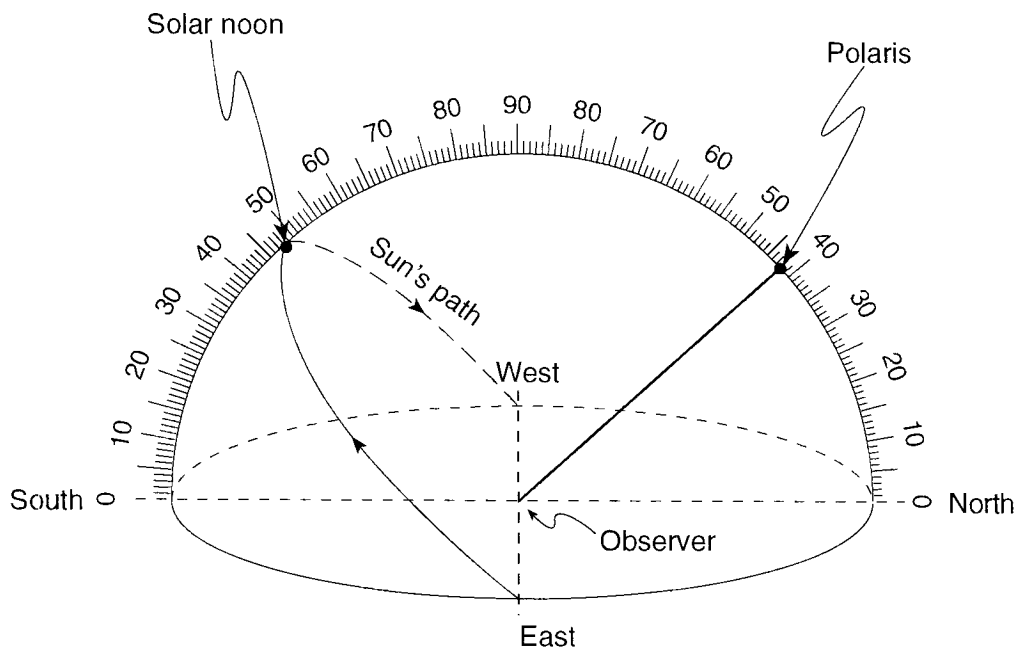
Base your answers to questions **19** through **21** on the diagram below, which represents Earth at a specific position in its orbit as viewed from space. The shaded area represents nighttime. Points *A* and *B* are locations on Earth's surface.



19. *a* State the month in which Earth is at the position shown in the diagram.
b State the latitude that receives the most intense radiation from the Sun when Earth is at this position in its orbit.
20. Describe the length of daylight at point *A* compared to the length of daylight at point *B* on the day represented by the diagram.
21. The model of Earth provided in **Diagram 2** represents Earth in its orbit *6 months later*. On the model shown
- draw the position of Earth's axis and label the axis
 - label the North Pole
 - draw the position of Earth's Equator and label the Equator
-

Seasons Practice Test

Base your answers to questions 22 through 24 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.



22. According to this diagram, what is the Sun's altitude at solar noon?
(A) 23.5° (B) 42° (C) 48° (D) 90°
23. Where is this observer most likely located?
(A) Massena (B) Mt. Marcy (C) Slide Mountain (D) Oswego
24. 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

Seasons Practice Test Answer Key

1. C

2. C

3. C

4. A

5. B

6. C

7. B

8. D

9. A

10. C

11. D

12. A

13. A

14. C

15. _____

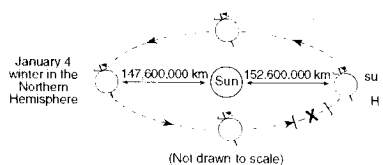
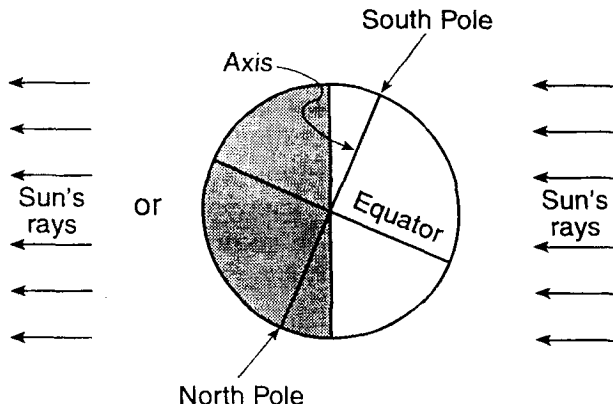
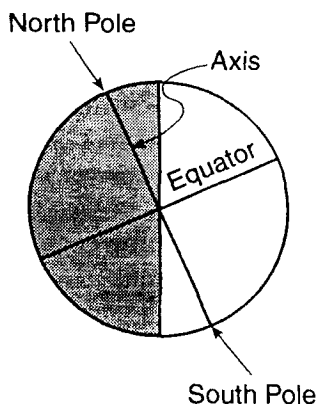
17. north

18. *Examples:* Hercules:
down and to the left
(west) – to the left –
counterclockwise *and*
Perseus: up and to the
right (east) – upward –
counterclockwise

19. *a* June; *b* $23\frac{1}{2}^{\circ}$ N *or*
Tropic of Cancer

20. *examples:* – There are
more daylight hours in *A*
than at *B*. – *A* is longer.

21.



22. C

The center of the X
must be between the
brackets indicated on
Earth's orbit, as shown
in the diagram.

23. C

24. A

