

Midterm Prep-Seasons/Suns Path

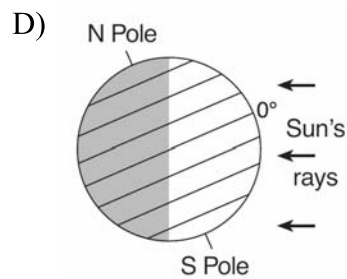
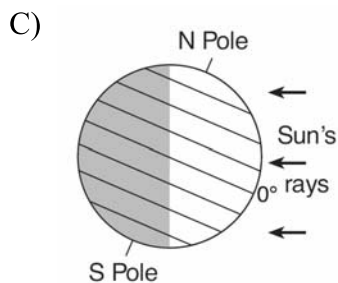
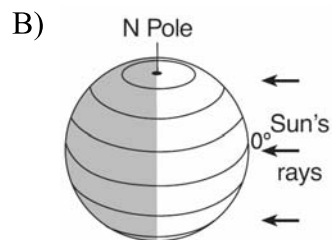
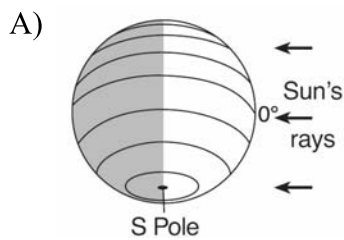
1. Seasonal changes on Earth are primarily caused by the

- 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

2. Which motion is responsible for the regular seasonal changes of the constellations visible in the night sky?

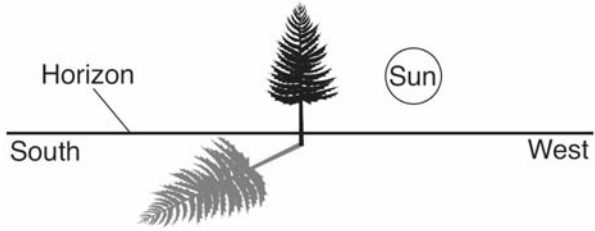
- A) The stars orbit Earth.
- B) The stars orbit the Sun.
- C) The Moon orbits Earth.
- D) Earth orbits the Sun.

3. Which diagram represents the tilt of Earth's axis relative to the Sun's rays on December 15?



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

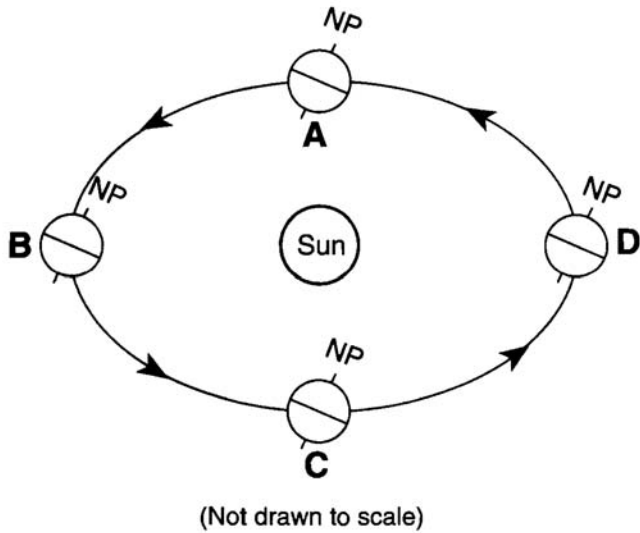


What time of day and season are represented by the diagram?

- A) early morning in winter
 - B) early morning in summer
 - C) late afternoon in winter
 - D) late afternoon in summer
5. On which day of the year does the Sun reach the greatest altitude at solar noon in New York City?
- A) June 21
 - B) July 21
 - C) August 21
 - D) September 21
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Base your answers to questions 6 and 7 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.



6. Which diagram best represents the Sun's apparent path as seen by an observer at 43.5° N latitude on December 21?

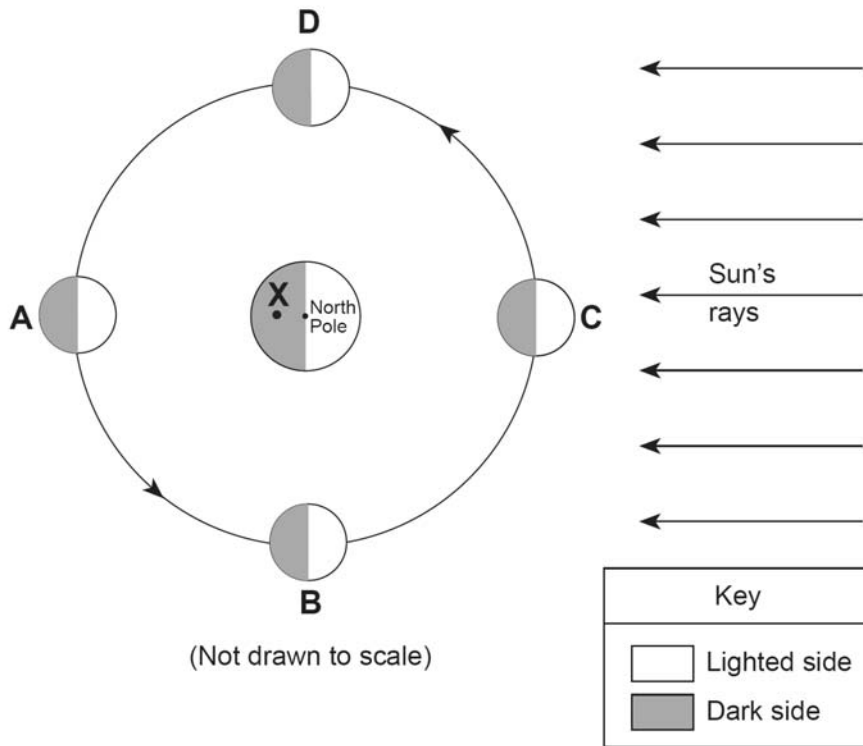
- A)
- B)
- C)
- D)

7. Which location in Earth's orbit represents the first day of summer in New York State?

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

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8. 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.

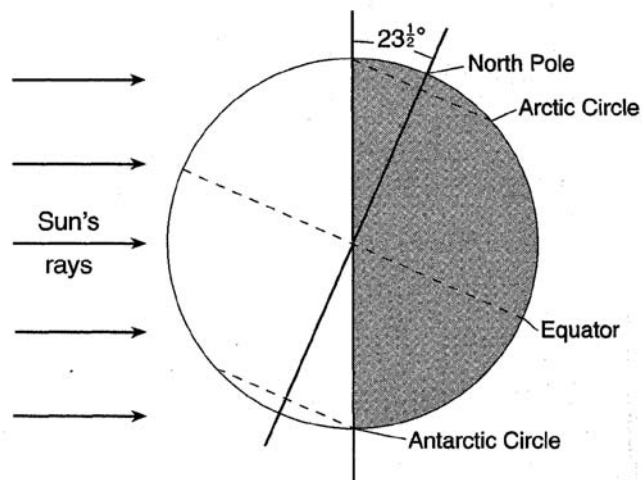


On what date does the line separating day and night pass through Earth's North Pole, as shown in this diagram?

- A) December 21 B) January 21 C) March 21 D) June 21

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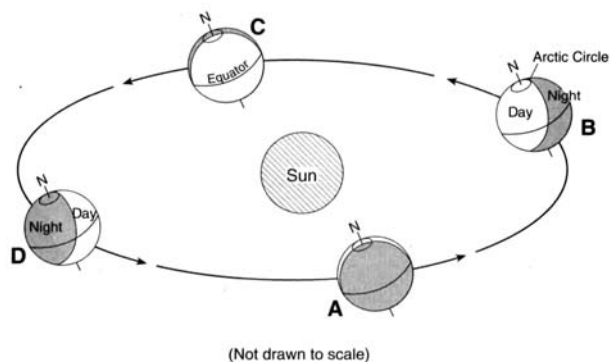
9. The diagram below shows Earth as viewed from space.



Which season is beginning in the Northern Hemisphere?

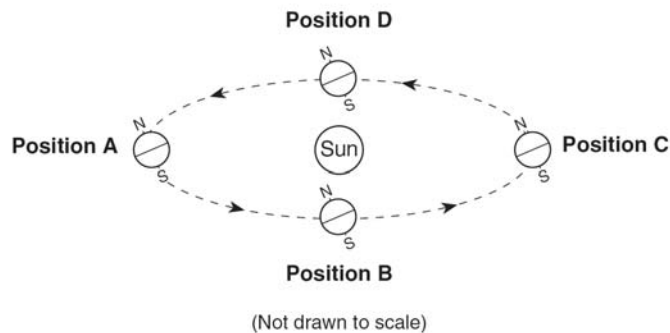
- A) spring B) summer
C) fall D) winter
10. Which motion causes the constellation Orion to be visible at midnight from New York State in winter but not in summer?
- A) rotation of Earth
B) rotation of Orion
C) revolution of Earth
D) revolution of Orion
11. At which latitude is the Sun directly overhead on certain days of the year?
- A) 23.5° N B) 42° N
C) 66.5° N D) 90° N
12. Which statement best describes the position of the Sun at sunrise and sunset as seen by an observer in New York State on June 21?
- A) The Sun rises north of due east and sets north of due west.
B) The Sun rises south of due east and sets south of due west.
C) The Sun rises north of due east and sets south of due west.
D) The Sun rises south of due east and sets north of due west.

13. 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.



Which location represents March 21?

- A) A B) B C) C D) D
14. The diagram below shows Earth in its orbit around the Sun. Positions A, B, C, and D represent Earth at the beginning of each season.

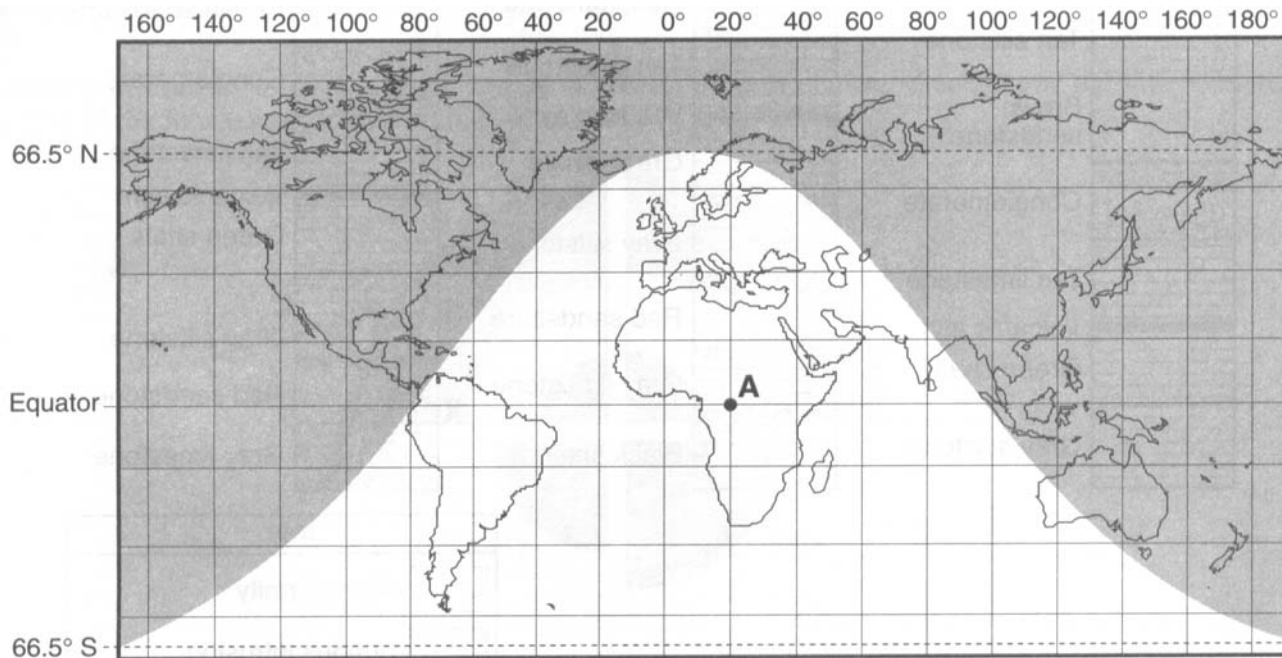


At which lettered position of Earth does New York State experience the first day of summer?

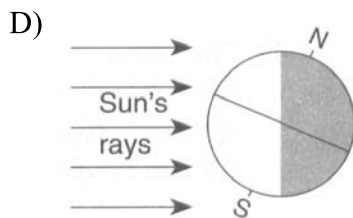
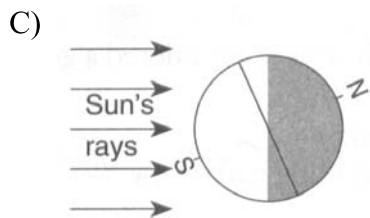
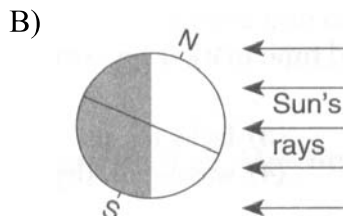
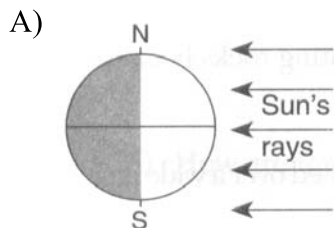
- A) A B) B C) C D) D

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15. Base your answer to the following question 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.

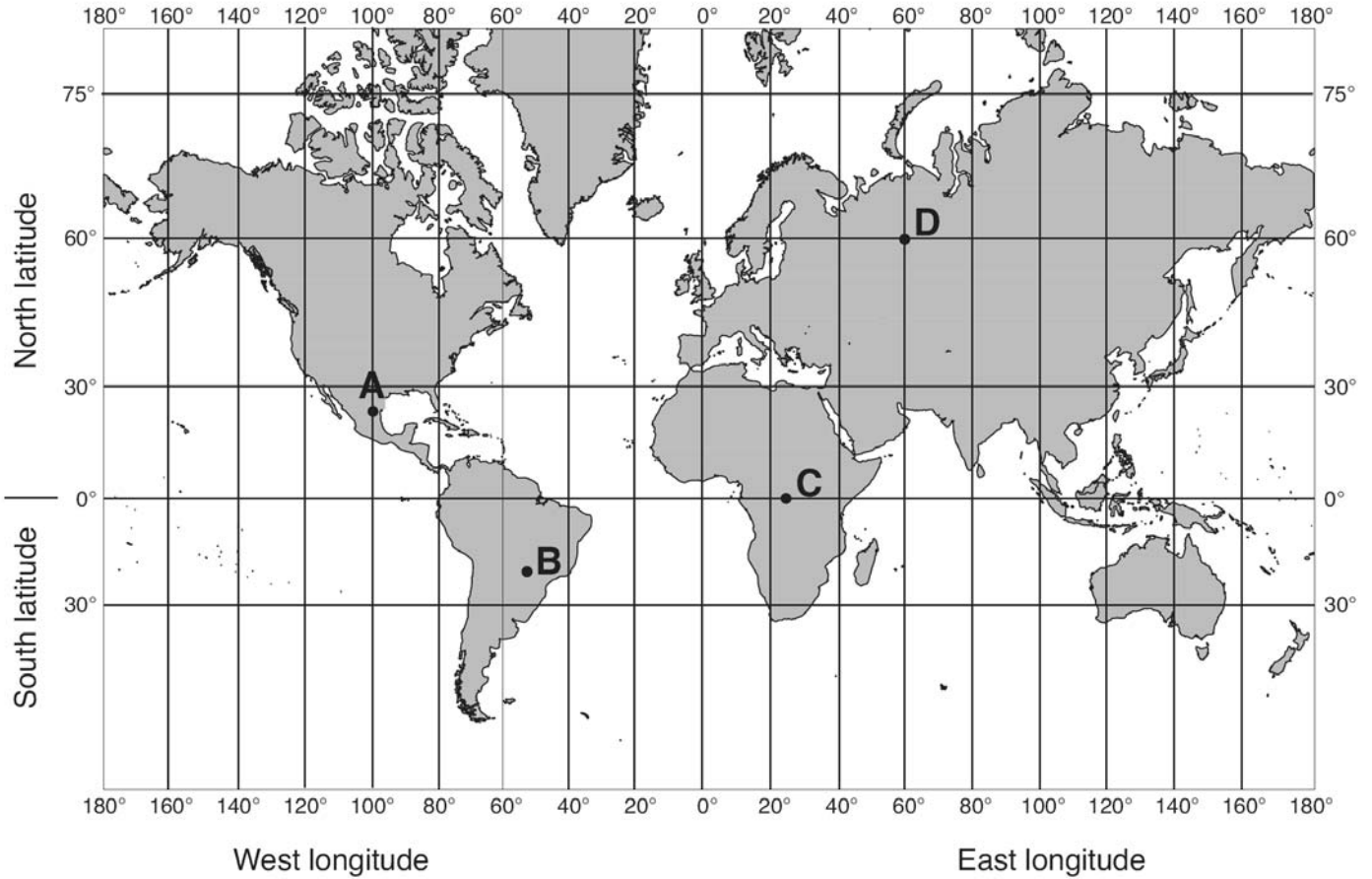


Which diagram shows the position of Earth relative to the Sun's rays on this day?



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Base your answers to questions 16 and 17 on the world map below. Letters *A* through *D* represent locations on Earth's surface.



16. At which location on December 21 is the Sun directly overhead at solar noon?

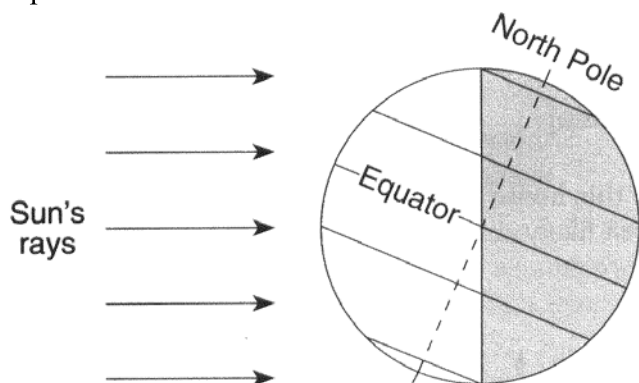
- A) A B) B C) C D) D

17. Which location receives 12 hours of daylight and 12 hours of darkness on June 21?

- A) A B) B C) C D) D

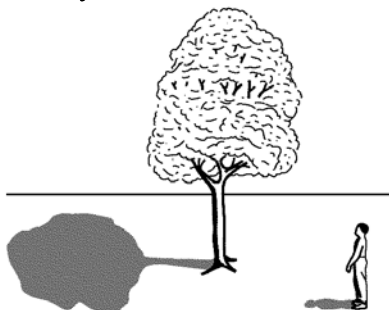
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18. The diagram below shows Earth on a particular day in its orbit around the Sun. The dashed line represents Earth's axis.



Which date is represented by the diagram?

- A) March 21 B) June 21
 C) September 23 D) December 21
19. 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

20. Which model best represents the apparent path of the Sun observed at various times during the year at the Equator?

