

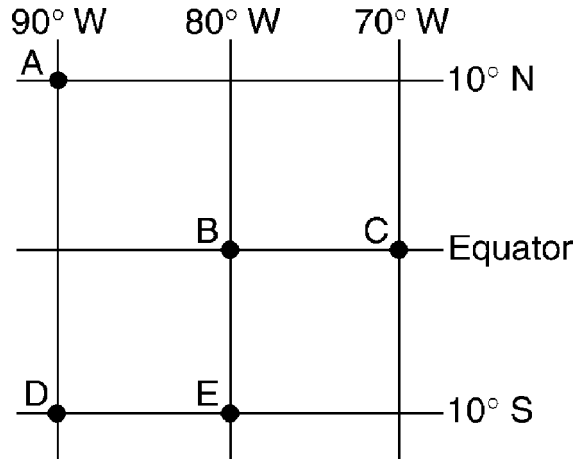
Latitude and Polaris

Name: _____

Date: _____

- Which altitude of Polaris could be observed in New York State?
A. 23° B. 35° C. 44° D. 90°
- As a ship crosses the Prime Meridian, the altitude of Polaris measured from the ship is 50° . What is the ship's location?
A. 0° latitude 50° east longitude
B. 0° latitude 50° west longitude
C. 50° North latitude 0° longitude
D. 50° south latitude 0° longitude
- When the time of day for a certain ship at sea is 12 noon, the time of day at the Prime Meridian (0° longitude) is 5 pm. What is the ship's longitude?
A. 45° W B. 45° E C. 75° W D. 75° E

- Base your answer(s) to the following question(s) on the map, which shows the latitude and longitude of five observers, A, B, C, D, and E, on Earth.



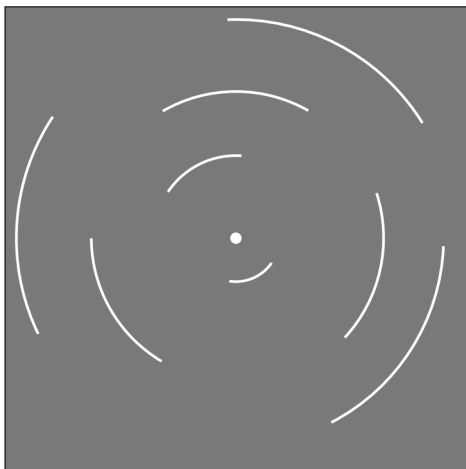
What is the altitude of *Polaris* (the North Star) above the northern horizon for observer A?

- A. 0° B. 10° C. 80° D. 90°
- As a ship crosses the Prime Meridian, an observer on the ship measures the altitude of Polaris at 60° . What is the ship's location?
A. 60° south latitude and 0° longitude
B. 60° North latitude and 0° longitude
C. 0° latitude and 60° east longitude
D. 0° latitude and 60° west longitude

6. What is the approximate altitude of *Polaris* at Syracuse, New York?

A. 43° B. 47° C. 76° D. 90°

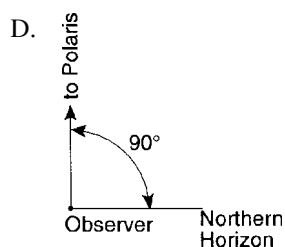
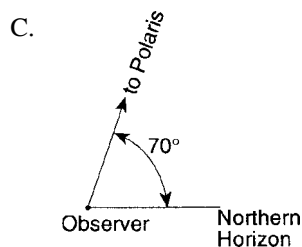
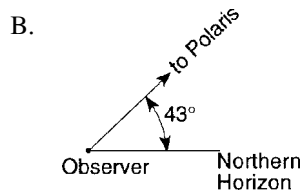
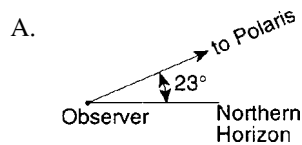
7. At a location in the Northern Hemisphere, a camera was placed outside at night with the lens pointing straight up. The shutter was left open for four hours, resulting in the star trails shown below.



At which latitude were these star trails observed?

A. 1°N B. 30°N C. 60°N D. 90°N

8. Which diagram best shows the altitude of *Polaris* observed near Buffalo, New York?



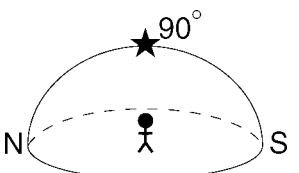
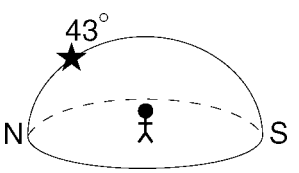
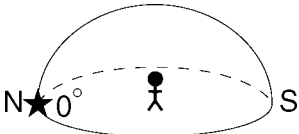
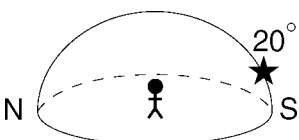
9. To an observer in Buffalo, New York, the North Star, *Polaris*, is always located above the northern horizon at an altitude of approximately

A. 23° B. 43° C. 66° D. 90°

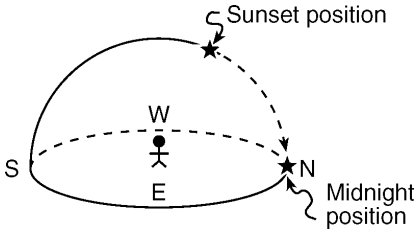
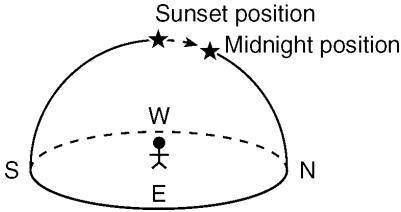
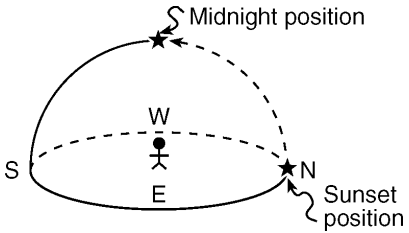
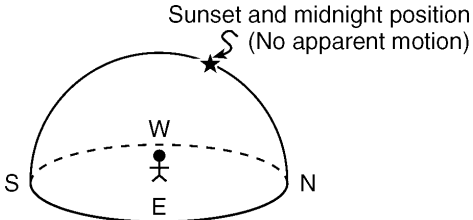
10. At which location will the highest altitude of the star *Polaris* be observed?

- A. Equator
- B. Tropic of Cancer
- C. Arctic Circle
- D. central New York State

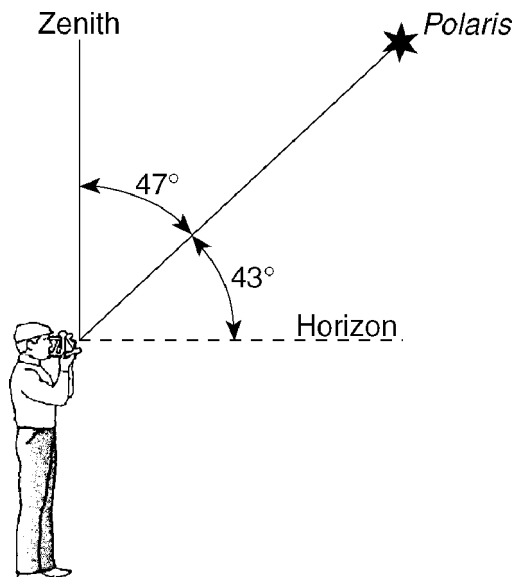
11. Which diagram represents the approximate altitude of *Polaris* as seen by an observer located in Syracuse, New York?

- A. 
- B. 
- C. 
- D. 

12. Which diagram correctly shows the apparent motion of *Polaris* from sunset to midnight for an observer in northern Canada?

- Key
- ★ *Polaris*
 —→ Apparent path of *Polaris*
- A. 
 - B. 
 - C. 
 - D. 

13. The diagram below shows an observer on Earth measuring the altitude of Polaris.

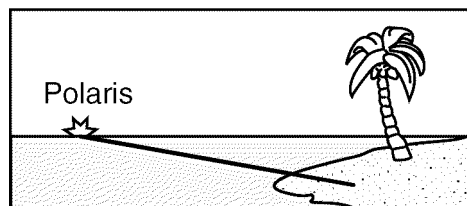


What is the latitude of this observer?

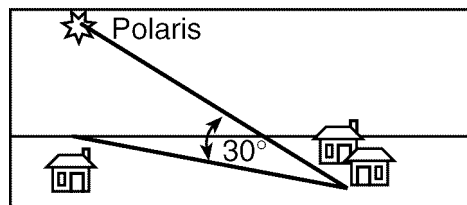
- A. 43°N B. 43°S C. 47°N D. 47°S

14. Which statement about *Polaris* is best illustrated by the diagrams shown below?

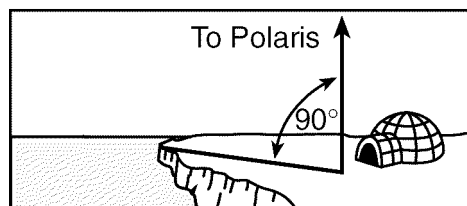
At Equator



At New Orleans, Louisiana

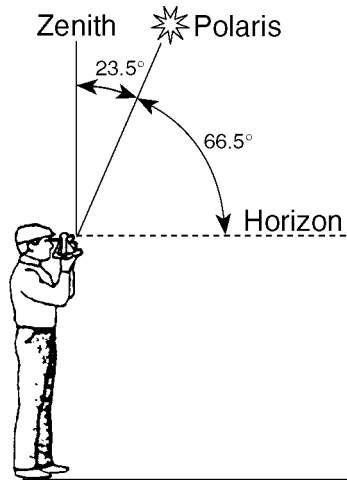


At North Pole



- A. *Polaris* is located in a winter constellation.
- B. *Polaris* is located at the zenith at each location.
- C. *Polaris*' apparent movement through the sky follows a south-to-north orientation.
- D. *Polaris*' altitude is equal to a location's latitude. At New Orleans, Louisiana

15. The diagram below shows an observer on Earth measuring the altitude of *Polaris*.



What is the latitude of this observer?

- | | |
|-----------------|-------------------|
| A. 90° N | B. 66.5° N |
| C. 43° N | D. 23.5° N |

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- | | |
|---------|---|
| 1. | |
| Answer: | C |
| 2. | |
| Answer: | C |
| 3. | |
| Answer: | C |
| 4. | |
| Answer: | B |
| 5. | |
| Answer: | B |
| 6. | |
| Answer: | A |
| 7. | |
| Answer: | D |
| 8. | |
| Answer: | B |
| 9. | |
| Answer: | B |
| 10. | |
| Answer: | C |
| 11. | |
| Answer: | B |
| 12. | |
| Answer: | D |
| 13. | |
| Answer: | A |
| 14. | |
| Answer: | D |
| 15. | |
| Answer: | B |