

Section: Mapping the Stars

1. How did ancient cultures group the stars in the sky?

2. What are two things that people have a better understanding of as a result of advances in astronomy?

PATTERNS IN THE SKY

- _____ 3. What are constellations?
- a. regions of the sky that contain recognizable star patterns
 - b. stars
 - c. star patterns
 - d. galaxies
- _____ 4. How did people in ancient cultures use the locations and movements of constellations?
- a. to create land boundaries
 - b. to make roads
 - c. to measure the universe
 - d. to navigate and keep track of time
- _____ 5. The ancient Greek constellation Orion was the same as
- a. the Japanese constellation of a hunter.
 - b. the Japanese constellation of a drum.
 - c. the Great Bear.
 - d. the Ursa Major.
- _____ 6. Which of the following is true of constellations?
- a. All cultures interpret the sky in the same way.
 - b. Every star or galaxy belongs to a constellation.
 - c. All ancient civilizations had the same names for the same constellations.
 - d. Astronomers disagree on the names and locations of the constellations.

DR 18-3 *continued*

- _____ 7. How many constellations are there?
- a. 88
 - b. 128
 - c. over 1,000
 - d. over 10,000
- _____ 8. The apparent locations of constellations in the night sky change their locations
- a. every day.
 - b. from season to season.
 - c. every year.
 - d. every other year.
- _____ 9. Why do constellations seem to change locations with the seasons?
- a. because the Earth tilts on its axis
 - b. because the Earth revolves around the sun
 - c. because the stars rotate around the Earth
 - d. because of an astronomical optical illusion
- _____ 10. Which of the following is true of constellations?
- a. People in all parts of the world see the same constellations.
 - b. People in Chile see the same constellations as people in the United States.
 - c. People in the Northern Hemisphere see the same constellations as people in the Southern Hemisphere.
 - d. People in the Northern Hemisphere see different constellations than people in the Southern Hemisphere.

FINDING STARS IN THE NIGHT SKY

11. An instrument that is used to determine a star or planet's location is a(n)

12. What are three reference points used to describe a star or planet's position in relation to a person's position?

DR 18-3 *continued*

Match the correct definition with the correct term. Write the letter in the space provided.

- | | |
|--|----------------------|
| _____ 13. an imaginary point directly above an observer's head | a. zenith |
| _____ 14. the line where the sky and the Earth appear to meet | b. celestial equator |
| _____ 15. the angle between an object in the sky and the horizon | c. horizon |
| _____ 16. an imaginary sphere that surrounds the Earth | d. altitude |
| _____ 17. an imaginary extension of the Earth's equator into space | e. celestial sphere |
18. The location of the sun on the first day of spring is the _____
19. Astronomers measure _____ in hours by how far east an object is from the vernal equinox.
20. Astronomers measure _____ in degrees by how far north or south an object is from the celestial equator.
21. Some stars located near Earth's poles can be seen year-round, at all times of night. What are these stars called?

THE SIZE AND SCALE OF THE UNIVERSE

- _____ 22. A light-year is equal to the distance that light travels in
- 1 month.
 - 1 year.
 - 9.46 years.
 - 9.46 trillion years.
- _____ 23. One light-year is about 9.46 trillion
- yards.
 - meters.
 - kilometers.
 - miles.

DR 18-3 *continued*

- _____ 24. How far away is the most distant object we can see?
- a. about 1 billion light-years
 - b. 9.46 billion light-years
 - c. more than 10 billion light-years
 - d. about 100 billion light-years

THE DOPPLER EFFECT

- _____ 25. What is the name of the effect that describes how the pitch of a sound seems higher as it gets closer and lower as it gets farther away?
- a. sound effect
 - b. wavelength effect
 - c. drowser effect
 - d. doppler effect
- _____ 26. When a star or galaxy moves quickly away from an observer, the light it emits
- a. appears bluer than it usually would.
 - b. appears redder than it usually would.
 - c. appears darker than it usually would.
 - d. appears lighter than it usually would.
- _____ 27. When a star or galaxy moves quickly toward an observer, the light it emits
- a. appears bluer than it usually would.
 - b. appears redder than it usually would.
 - c. appears darker than it usually would.
 - d. appears lighter than it usually would.
28. An effect in which a star or galaxy appears to move quickly away from an observer is called_____.
29. An effect in which a star or galaxy appears to move quickly toward an observer is called_____.
30. Edwin Hubble discovered that the light from all galaxies except the Milky Way's close neighbors is affected by_____.
31. How did Edwin Hubble determine that the universe must be expanding?
