

SECTION 28.3 *The Sun-Earth-Moon System*

R-2014

In your textbook, read about the motions of Earth, the Sun, and the Moon.

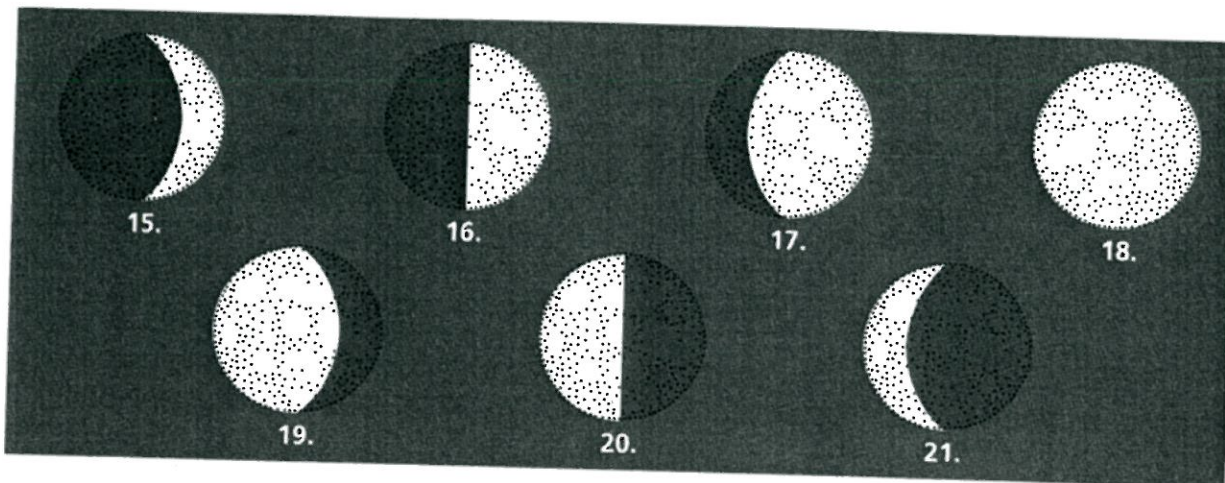
In the space at the left, write *true* if the statement is true; if the statement is false, change the italicized word or phrase to make it true. ☆ ☆ ☆

- X 1. All societies base their calendars and timekeeping systems on the *apparent motion of the Sun and Moon*.
2. The Sun, Moon, and stars appear to rise in the east and set in the west because of the rotation of *the Moon*.
- X 3. You can demonstrate that Earth rotates through the use of a *Foucault pendulum*.
- X 4. The period from one sunrise or sunset to the next is called the *solar day*.
- X 5. The length of time it takes for the Moon to go through a complete cycle of phases is called the *lunar month*.
6. Annual variations in the length of the day and in temperatures are dependent on the *longitude* where you live.
7. The plane of Earth's orbit about the Sun is called the *solstice*.
8. The seasons are caused by Earth's orbit around the Sun in combination with the *tilt of Earth's axis*.
9. The hemisphere that is tilted toward the Sun experiences *winter*.
10. A *solar eclipse* occurs when the Moon passes through Earth's shadow.
11. On the *summer solstice*, the number of daylight hours for the northern hemisphere is at a maximum.
12. During the northern hemisphere's summer, the sun appears *lower* in the sky than it does in winter.
13. On the winter solstice, the number of daylight hours is at its *minimum*.
14. The lengths of day and night are equal for *both the northern and southern hemispheres* on the vernal equinox.

SECTION 28.3 *The Sun-Earth-Moon System, continued*

In your textbook, read about the phases of the Moon.

Label each phase of the Moon below. Choose from the following phases: *waning gibbous, waxing crescent, third quarter, first quarter, waxing gibbous, waning crescent, full moon.*



15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____

Answer the question.

22. Why is the Moon invisible from Earth during a new moon?

SECTION 28.3 The Sun-Earth-Moon System, continued

In your textbook, read about the phases and motions of the Moon and about eclipses.
For each item in Column A, write the letter of the matching item in Column B.

Column A

- _____ 23. The closest point to Earth in the Moon's orbit
- _____ 24. The inner portion of the shadow cast on Earth by the Moon
- _____ 25. Blocking of the Sun's light by the Moon passing between Earth and the Sun
- _____ 26. Farthest point from Earth in the Moon's orbit
- _____ 27. State at which the Moon's orbital and rotational periods are equal
- _____ 28. Occurs when the Moon passes through Earth's shadow
- _____ 29. Length of time it takes for the Moon to go through a complete cycle of phases
- _____ 30. The daily rise and fall of Earth's oceans caused by the gravitational pull of the Moon and the Sun
- _____ 31. Outer portion of the shadow cast on Earth by the Moon

Column B

- a. synchronous rotation
- b. lunar month
- c. tides
- d. solar eclipse
- e. umbra
- f. penumbra
- g. perigee
- h. apogee
- i. lunar eclipse

Circle the letter of the choice that best completes the statement.

- 32. The fact that Earth observers always see the same side of the Moon is explained by the Moon's
 - a. eclipse.
 - b. penumbra.
 - c. gravity.
 - d. synchronous rotation.
- 33. The tides on Earth are caused by the gravitational pull of the
 - a. the Moon only.
 - b. the Sun only.
 - c. both the Moon and the Sun.
 - d. neither the Moon nor the Sun.
- 34. During an annular solar eclipse, the Moon
 - a. is near perigee.
 - b. does not completely block the Sun.
 - c. passes through Earth's shadow.
 - d. always appears reddish in color.