Chapter Review

Multiple Choice. Choose the letter that corresponds to the best answer.

1. Which idea describes the geocentric model of the universe?
   a. Earth rotates around the sun.
   b. The sun is the center of the universe.
   c. Earth is not the center of the universe.
   d. The sun, the moon, and the stars revolve around Earth.

2. How many years does Earth require to complete a cycle of precession?
   a. 10,000
   b. 15,000
   c. 21,000
   d. 26,000

3. Ancient astronomers used epicycles to explain
   a. the motion of the sun around Earth
   b. the elliptical orbits of the planets around Earth
   c. the circular motion of the planets around the sun
   d. the retrograde motion of the planets around Earth

4. In the model proposed by Nicolas Copernicus, which celestial object was at the center of the solar system?
   a. Earth
   b. moon
   c. sun
   d. cannot be determined

5. Which observation gave astronomers the idea that Earth is spherical?
   a. lunar eclipses
   b. phases of Venus
   c. phases of the moon
   d. all of the above

6. Which idea is common to both the Ptolemaic and Copernican models?
   a. Planets move in circular orbits.
   b. Earth is the center of the universe.
   c. The sun is the center of the universe.
   d. none of the above

7. Which was not observed by Galileo?
   a. sunspots
   b. the moons of Mars
   c. the phases of Venus
   d. the uneven surface of the moon

8. Which represents the key element in Kepler's first law of planetary motion?
   a. the period of the planer's orbit
   b. the distance of the planet from the sun
   c. the circular orbits of the planet around the sun
   d. the elliptical orbits of the planet around the sun

For numbers 9 and 10, refer to the choices below.
   a. when a planet is nearest to the sun
   b. when a planet is farthest from the sun
   c. when a planet is in apparent retrograde motion
   d. when the distance of a planet from the sun exceeds 1.0 AU

9. According to Kepler's laws, when does a planet move fastest in its orbit around the sun?

10. When does it move slowest in its orbit around the sun?

11. Which is a correct pairing?
   a. Aristarchus: Earth's circumference
   b. Brahe: invention of telescope
   c. Galileo: use of telescope
   d. Johannes Kepler: craters of the moon

For numbers 12 to 15, choose from the following:
   a. Brahe
   b. Hipparchus
   c. Kepler
   d. Plato

12. He made the first correct description of the way planets move in the solar system.

13. He thought that the universe was perfect and unchanging.

14. He provided accurate information about the stars and the planets even before the invention of telescopes.

15. He was credited for having discovered the precession of the Earth.