HW 3

Leslie Looney
Started: February 7, 2006 8:38 PM   10 Questions

Finish   Help   Save All

1. (10 point(s))

Over a single night the diurnal motion makes the planets seem to

○ 1. move sometimes East and sometimes West.

○ 2. move with respect to the stars, eastward.

○ 3. move with respect to the stars, westward.

○ 4. rise in the East and set in the West.

Save Answer

---

2. (10 point(s))

An apparent westward motion of a planet from night to night (over many nights) compared to the background stars (as viewed from Earth) is referred to as

○ 1. retrograde motion.

○ 2. precession.

○ 3. rising (if in the east) or setting (if in the west).

○ 4. prograde or direct motion.
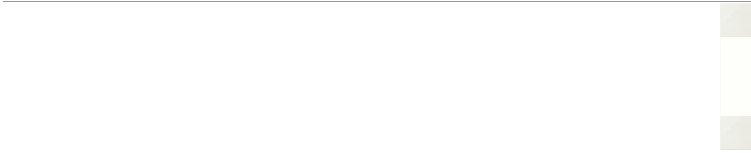
Save Answer

---

3. (10 point(s))

Ptolemy's model for the solar system was

○ 1. Earth-centered, with epicyclic planetary orbits.

○ 2. Sun-centered, with planets moving in circles around it.

○ 3. Earth-centered, with Sun, Moon, and planets moving in ellipses in the sky.

○ 4. Sun-centered, with elliptical planetary orbits.

Save Answer

---

4. (10 point(s))

Your friend Dumm announces at a particularly dull party, "The Universe is clearly revolving around the Earth. NASA is trying to cover it up!" What do you say?

Save Answer

---

5. (10 point(s))

Which of the following statements correctly describes why Copernicus decided that the orbits of Mercury and Venus were smaller than the orbit of Earth?

○ 1. Both planets show a complete cycle of phases, like the Moon.

○ 2. Both planets can sometimes be seen high in our sky at midnight.

○ 3. Both planets occasionally pass through conjunction with the Sun, as seen from Earth.

○ 4. Both planets stay fairly close to the Sun in our sky.

Save Answer

---

6. (10 point(s))

Explain the importance of Kepler's 3rd law. What does it say about planets that are 100 times more massive than the Earth? What does it say about planets that are farther away from the Sun? What does it say about planets that are closer than the Sun?

Save Answer

---

7. (10 point(s))

An asteroid in the asteroid belt orbits the Sun at a distance of 2.8 AU. Using Kepler's Laws, determine the period of this asteroid.

○ 1. 1.27 years

○ 2. 4.68 years

○ 3. 1.56 years

○ 4. 2.01 years

[Save Answer]

---

8. (10 point(s))

Why were Newton's three laws so important to astronomy?

○ 1. They provided a physical basis which did not conflict with the Bible, Aristotle, or Plato.

○ 2. They showed that planets can move around the Sun by themselves forever, without coming to rest.

○ 3. They showed why objects released from rest always fall to the ground.

○ 4. They showed that acceleration always results from a change in velocity.

[Save Answer]

---

9. (10 point(s))

An object orbiting the Sun in a circle can be said to be

○ 1. weightless.

○ 2. always accelerating

○ 3. moving under the action of equal and opposite forces.

○ 4. moving at a constant velocity.

[Save Answer]

---

10. (10 point(s))

If an astronaut landed on a planet that had the same radius as Earth but four times its mass, then the astronaut's weight on the planet would be

○ 1. twice her height on Earth

○ 2. twice her weight on Earth.

○ 3. four times her weight on Earth.

○ 4. the same as on Earth, because weight is independent of location.

○ 5. sixteen times her weight on Earth.

Save Answer

Finish | Help | Save All