

1. Right ascension in the sky is very similar to latitude on the earth.
2. Latitude and right ascension are coordinate systems used to find objects on the Celestial Sphere.
3. In general, the brightest star in a given constellation is designated as alpha.
4. The closest terrestrial analog to hours of right ascension is angle of longitude.
5. A tropical year is the same as a sidereal year.
6. An hour of right ascension corresponds to 60 degrees in the sky.
7. At the solstices, the Sun's declination will be 23.5 degrees from the equator.
8. At the equinoxes, the declination of the Sun must be zero degrees.
9. Right ascension in the sky is very similar to latitude on the earth.
10. Latitude and right ascension are coordinate systems used to find objects on the Celestial Sphere. 1
11. The celestial sphere is divided into 88 modern constellations. 1
12. In the sky, declination is measured in degrees north or south of the celestial equator. 1
13. The south celestial pole is located at a declination of -90 degrees. 1
14. In general, the brightest star in a given constellation is designated as alpha. 1
15. The stars of a constellation are all close together in three dimensional space as well as on the celestial sphere. 1
16. The closest terrestrial analog to hours of right ascension is angle of longitude.
17. Over 20,000 stars are visible to the naked eye on the darkest, clearest nights.
18. A star with a right ascension of 2.6 hrs will rise 2.6 hours after the vernal equinox.
19. A tropical year is the same as a sidereal year.
20. The sidereal day is determined by the earth's rotation with respect to the stars.
21. The vernal equinox marks the beginning of spring in the northern hemisphere.
22. There are 3,600 arc seconds in a degree.
23. An hour of right ascension corresponds to 60 degrees in the sky.
24. The Sun and the Moon each appear to be about a half-degree across in the sky.
25. At the solstices, the Sun's declination will be 23.5 degrees from the equator.
26. At the equinoxes, the declination of the Sun must be zero degrees.
27. As the earth rotates, the half-degree wide Moon moves its own diameter eastward every minute.
28. The week is based on the quarter phase of the Moon, such as from new Moon to first quarter, or full, or third quarter.
29. Only people in the Moon's umbral shadow can see a total solar eclipse.
30. If we are the Moon's penumbra, then we will see a partial lunar eclipse.
31. There is a solar eclipse of some kind every new Moon.
32. A Moon that is 18 days old (since new Moon) is waning gibbous in phase.
33. A total solar eclipse will only occur when the new Moon is both on the ecliptic and at its greatest distance from earth.
34. The larger the parallax shift, the closer an object is to us.
35. The parallax shift for all stars is very small.
36. Increasing the baseline will increase the parallax angle.
37. In the scientific method, it is not necessary to test your theory.
38. In general, what is true of the alpha star in a constellation?
  - A) It is the star that is closest to Earth.
  - B) It is the westernmost star in the constellation.
  - C) It is the reddest star in the constellation.
  - D) It is the easternmost star in the constellation.
  - E) It is the brightest star in the constellation.
39. Into how many constellations is the celestial sphere divided?
  - A) 12
  - B) 44
  - C) 57
  - D) 88
  - E) 110
40. A star with a declination of +60.0 degrees will be
  - A) west of the vernal equinox.
  - B) east of the vernal equinox
  - C) north of the celestial equator.
  - D) south of the celestial equator.
  - E) None of these answers are correct.

41. What are constellations?
- Groups of stars gravitationally bound and appearing close together in the sky
  - Apparent groupings of stars and planets visible on a given evening
  - Ancient story boards, useless to modern astronomers
  - Groups of stars making an apparent pattern in the celestial sphere
  - Groups of galaxies gravitationally bound and close together in the sky
42. A star with a right ascension of 1.0 hours will rise
- 11.0 hours after the vernal equinox.
  - 13.0 hours before the vernal equinox. vernal equinox.
  - 1.0 hours before the vernal equinox.
  - at the same time as the vernal equinox.
  - 1.0 hours after the vernal equinox.
43. The twelve constellations the solar system bodies move through are the
- signs of the zodiac.
  - galactic equator.
  - nodes of the ecliptic.
  - equatorial constellations.
  - stages of heaven.
44. The 26,000 year cycle that changes the poles and equinoxes is called
- precession.
  - regression.
  - the earth's rotation.
  - revolution.
  - a retrograde loop.
45. From the horizon to the observer's zenith is an angle of
- 66.5 degrees for everyone on the earth.
  - 23.5 degrees for observers at the Tropics of Cancer and Capricorn.
  - 90 degrees for everyone on the earth.
  - 30 degrees for observers at a latitude of 30 degrees north.
  - 0.0 degrees for an observer at the Earth's north pole.
46. That Polaris will not always be the pole star is due to
- precession shifting the celestial pole.
  - the Solar winds blowing the earth farther away from the Sun.
  - the earth's revolution being slightly less than exactly 365.25 days.
  - the sidereal day being shorter than the solar day.
  - the Moon following the ecliptic, instead of the equator.
47. While watching a star, you see it moves 15 degrees across the sky. How long have you been watching it?
- 1 minute
  - 1 hour
  - 3 hours
  - 15 seconds
  - 15 minutes
48. You note that a particular star is directly overhead. It will be directly overhead again in
- 1 hour
  - 12 hours
  - 23 hours 56 minutes
  - 24 hours 4 minutes
  - 48 hours 8 minutes
49. When the Moon is directly opposite the Sun in the sky, its phase is
- waxing or waning gibbous.
  - waxing or waning crescent
  - full.
  - new.
  - first or third quarter.
50. The fact that the Earth has moved along its orbit in the time it took to rotate once is the reason for
- precession.
  - earth's 23.5 degree tilt.
  - seasons.
  - the position of the Celestial Equator.
  - the difference between solar and sidereal time.
51. If Taurus is now rising at sunset, which constellation will rise at sunset next month?
- Aquarius
  - Gemini
  - Scorpius
  - Pisces
  - Aries
52. If Scorpius is now prominent in the summer sky, in 13,000 years it will be best seen
- in the autumn.
  - in the winter sky.
  - at the same season; the heavens do not change.
  - in the spring sky.
  - It will not be visible then at all. All of its stars will have vanished by then.
53. The star Thuban in Draco
- lies as the center of the precession cycle.
  - was an excellent pole star in 3,000 BC.
  - is used to locate the vernal equinox.
  - lies halfway between the bowls of the Big and Little Dippers.
  - is brighter than Polaris.

54. The interval from new Moon to first quarter is about a(n)
- week.
  - month.
  - day.
  - year.
  - hour.
55. The time for the Moon to orbit Earth, relative to the stars is
- 18 years, 11.3 days
  - about 7 days
  - 23 hours, 56 minutes
  - 27.3 days
  - 29.5 days
56. If you are in the Moon's umbral shadow, then you will witness
- a total solar eclipse.
  - nighttime.
  - a total lunar eclipse.
  - some kind of lunar eclipse.
  - a partial solar eclipse.
57. What will occur when the full Moon is on the ecliptic?
- a total solar eclipse
  - a total lunar eclipse
  - a partial solar eclipse
  - a partial lunar eclipse if the Moon is at perigee
  - an annular lunar eclipse
58. The conditions needed to produce a solar eclipse are a
- full Moon on the Celestial Equator
  - new Moon above the ecliptic
  - first or third quarter moon on the ecliptic.
  - full Moon on ecliptic
  - new Moon on ecliptic
59. If new Moon fell on March 2nd, what is the Moon's phase on March 14th?
- first quarter
  - waxing gibbous
  - waning crescent
  - waxing crescent
  - full
60. If the Moon appears half lit, and is almost overhead about 6:00 AM, its phase is
- first quarter.
  - full.
  - third quarter.
  - waxing crescent.
  - waning crescent.
61. The synodic month is
- based on the moon's position relative to the stars.
  - caused by both the earth's and Moon's rotations.
  - the basis of the year we use in our modern calendar.
  - about two days shorter than the sidereal month.
  - 29.5 days.
62. If you are in the earth's umbra, then
- it must be a lunar eclipse of some type.
  - it is night time.
  - the Moon is always visible.
  - the Sun is always visible.
  - it must be a total solar eclipse.
63. In an annular eclipse
- the Sun is partially blocked by the Earth.
  - the Sun is totally blocked by the Moon.
  - The Moon appears as a thin, bright ring.
  - the Sun appears as a thin, bright ring.
  - The Moon is totally blocked by the Earth.
64. The greatest distance above or below the ecliptic can the Moon move is
- 5.2 degrees
  - 23.5 degrees
  - 27.3 degrees
  - 29.5 degrees
  - 30 degrees
65. The star Wolf 1061 has a parallax of 2.34 arcseconds, while the star Ross 652 has a parallax of 1.70 arcseconds. What can you correctly conclude?
- Wolf 1061 is closer to Earth than Ross 652.
  - Ross 652 must have a larger proper motion than Wolf 1061.
  - Ross 652 is closer to Earth than Wolf 1061.
  - Wolf 1061 must have a larger proper motion than Ross 652.
  - Both stars are outside the Milky Way galaxy.
66. Drawing on Erasthenes' method, if two observers are due north and south of each other and are separated by 400 km, what is the circumference of their spherical world if they see the same star on their meridian at altitudes of 23 degrees and 47 degrees respectively, and at the exact same time?
- 2,000 km
  - 4,000 km
  - 6,000 km
  - 8,000 km
  - 12,000 km