

The Sky.

1. The celestial equator is
 - a) The path of the sun compared with the stars
 - b) The path of the moon compared with the stars
 - c) always directly overhead at the Earth's equator
 - d) always on the horizon for observers at the Earth's equator

2. The distance of Polaris from the zenith
 - a) is always 90 degrees
 - b) is always 23.3 degrees
 - c) is always 0 degrees
 - d) varies with your latitude
 - e) varies with the season

3. If a planet had its rotation axis perpendicular to its orbital plane, its seasons would
 - a) depend on the distance from the sun
 - b) be non-existent
 - c) be shorter than on Earth
 - d) be longer than on Earth

4. Star A has a magnitude of -1 and star B has a magnitude of $+1$, so star A is
- a) about twice as faint as star B
 - b) about twice as bright as star B
 - c) about 2.5 times as faint as star B
 - d) about 6 times brighter than star B
 - e) about 6 times fainter than star B
5. Sound travels at a speed of 300 metres per second. In analogy to the light year, what does 1 sound-minute equal?
- a) The distance travelled by sound in 1 minute
 - b) The time it takes to travel 300 metres
 - c) The time delay of a sound heard 300 metres away
 - d) The speed of sound 1 minute later
6. The star Betelgeuse is about 500 light years away, if it underwent a supernova explosion today, when would we know about it?
- a) 8 minutes
 - b) 10 years
 - c) 500 years
 - d) 500 light years

7. How far from Earth is the nearest star?
- a) 1 light year
 - b) 4 light years
 - c) 1×10^6 km
 - d) 1 AU
8. Which of the following would be the preferable telescope for an optical astronomer
- a) a 10 metre telescope in space
 - b) a 10 metre telescope on the top of a 4000 m mountain
 - c) a 30 metre telescope on the top of a 2000 m mountain with adaptive optics
 - d) a 50 metre telescope that is easily accessible, e.g. just outside of Vancouver
9. A telescope with a diameter of 8-m, compared to a telescope of diameter 2-m, can observe objects
- a) 4 times as faint
 - b) 3 magnitudes fainter
 - c) 6 magnitudes fainter
 - d) 36 magnitudes fainter
 - e) 2 times as faint