

Lesson Quiz

The Scale of the Universe

Write the letter of the correct answer on the line at the left.

1. ___ In space, light travels at a speed of about 300,000,000 m/s. Which expresses that speed correctly in scientific notation?
 - A 300,000 km/s
 - B 3×10^9 m/s
 - C 3×10^8 m/s
 - D 3×10^7 m/s
2. ___ A star is 9×10^{12} meters from Earth. What is that number in expanded form?
 - A 900,000,000,000 meters
 - B 9,000,000,000,000 meters
 - C 90,000,000,000,000 meters
 - D 9.0×10^{12} meters
3. ___ After six months, an astronomer notices that star A moves a greater distance than star B. Which conclusion is correct?
 - A star A is closer than star B.
 - B star A and star B are equally far away.
 - C star A is farther away than star B.
 - D More observations are necessary to determine which star is farther away.
4. ___ A star looks like it's located one place in the sky in January and a different place in June. What is this phenomenon called?
 - A a light-year
 - B parallax
 - C refraction
 - D scientific notation

Fill in the blank to complete each statement.

5. _____ uses powers of ten to write very large or very small numbers in shorter form.
6. The _____ is made up of all of space and everything in it.
7. A light-year is a measure of _____.
8. Astronomers use _____ to measure the distance to stars that are within several hundred light-years of Earth.
9. The distance light travels through space in a year is one _____.
10. Parallax is the apparent change of _____ of an object when you look at it from different places.

Review and Reinforce

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Understanding Main Ideas

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ The spacecraft *Voyager* is 16,000,000,000 km away from Earth. That is the same as 1.6×10^{10} km.
2. _____ An astronomer says that his house cost $\$2.9 \times 10^5$. That is $\$2,900,000$.
3. _____ A light-year is a measure of time on an astronomical scale.
4. _____ Astronomers often use parallax to measure distances to stars.
5. _____ Refraction makes nearby stars look like they shift position against the background of stars between winter and summer viewings from Earth.
6. _____ The solar system is all of space and everything in it.

Building Vocabulary

Write a definition for each of these terms on the lines below.

7. light-year

8. parallax

9. universe

10. scientific notation
