

M O D E R N E A R T H S C I E N C E

Section 1.3

Birth of a Theory: The Big Bang

Complete: each statement by writing the correct term or phrase in the space provided.

1. A theory that is well established through research and experimentation is most likely to become a scientific _____.
2. When light passes through a glass prism, it produces a band of colors called the _____.
3. The apparent shift in the wavelengths of energy emitted by an energy source moving away from or toward an observer is known as the _____.
4. When heated, each element produces a series of thin colored lines called a _____.
5. Scientists studying starlight determine what elements are present in the stars by using a _____.
6. The discovery of a red shift in the spectra of galaxies provided evidence that the universe is _____.

Choose the one best response. Write the letter of that choice in the space provided.

7. Background radiation evenly distributed throughout the universe likely resulted from:
 - a. the Doppler effect.
 - b. moving galaxies.
 - c. the big bang.
 - d. starlight spectra.
8. When a light source moves toward an observer, the light waves appear to be:
 - a. moving slower.
 - b. longer.
 - c. moving faster.
 - d. shorter.
9. It is thought that before the Big Bang all the matter and energy in the universe was in the form of one:
 - a. extremely small volume.
 - b. solar system.
 - b. expanding cloud.
 - d. galaxy.



Traveling Light Wave

10. Look at the diagram. One wavelength is equal to the distance between points:
 - a. 1 and 3.
 - b. 1 and 4.
 - c. 2 and 3.
 - d. 2 and 4.