Name _____ Date _____ Class _____

Content Practice A Chapter 22.1 Review **LESSON 1**

The View from Earth

Directions: *Circle the term in parentheses that correctly completes each sentence.*

1. Because Earth rotates on its axis from west to east, the stars and planets in the sky appear (to move, brighter) during the course of the night.
2. The North Star, named (Sirius, Polaris), is almost directly above the North Pole.
3. The stars in a (galaxy, constellation) happen to appear close together when they are seen from Earth, but they are far apart in space.
4. Astronomers divide the sky into 88 (regions, solar systems), also called constellations.
5. A star emits a range of (magnitudes, wavelengths) called its spectrum.
6. Telescopes can detect visible light and other types of (radiation, wavelengths).
7. A spectroscope spreads light into different (elements, wavelengths).
8. Astronomers can analyze the elements that make up a star by passing its light through a (spectroscope, telescope).
9. Different types of (planets, stars) emit electromagnetic radiation with different wavelengths.
10. A stationary object might appear to change (luminosity, position) when it is viewed from two different points.
11. (Parallax, Luminosity) is the apparent change in an object's position caused by looking at it from two different points.
12. Astronomical units are convenient to use in the solar system because distances easily can be compared to the distance between Earth and the (Sun, Moon).
13. Light-years measure distances to objects that are (outside, within) the solar system.
14. The brightness of an object as seen from Earth is its (absolute, apparent) magnitude.
15. (Luminosity, Parallax) is the true brightness of an object.

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Key Concept Builder LESSON 1

The View from Earth

Key Concept What can astronomers learn about stars from their light?

Directions: *On each line, write the term from the word bank that correctly completes each sentence. Some terms may by used more than once or not at all. Use the diagram to answer questions 8 and 9.*

Electromagnetic Spectrum

Low energy
Long wavelength

High energy
Short wavelength

Radiation Type	Radio	Microwave	Infrared	Visible	Ultraviolet	X-ray	Gamma ray
Wavelength (m)	10^{3}	10^{-2}	10^{-5}	0.5×10^{-6}	10^{-8}	10^{-10}	10^{-12}

constellation	**electromagnetic**	**high-energy**	**low-energy**
spectroscope	**spectrum**	**telescope**	**wavelength**

1. Different objects in space emit different ranges of wavelengths from the _____ spectrum.

2. The range of wavelengths that a star emits is the star's _____.

3. Visible light is just a small part of the _____ spectrum.

4. A star emits light that is characteristic of its makeup. A(n) _____ measures the properties of light with specific wavelengths.

5. An optical _____ uses mirrors or lenses to collect electromagnetic radiation emitted by stars.

6. Some stars emit radio waves that can be collected by a(n) _____ and analyzed with a spectroscope.

7. Astronomers can study the temperature, composition, and energy of a star using a(n) _____.

8. An exploding star emits mostly _____ ultraviolet waves and X-rays.

9. A newly formed star emits mostly _____ radio and infrared rays.

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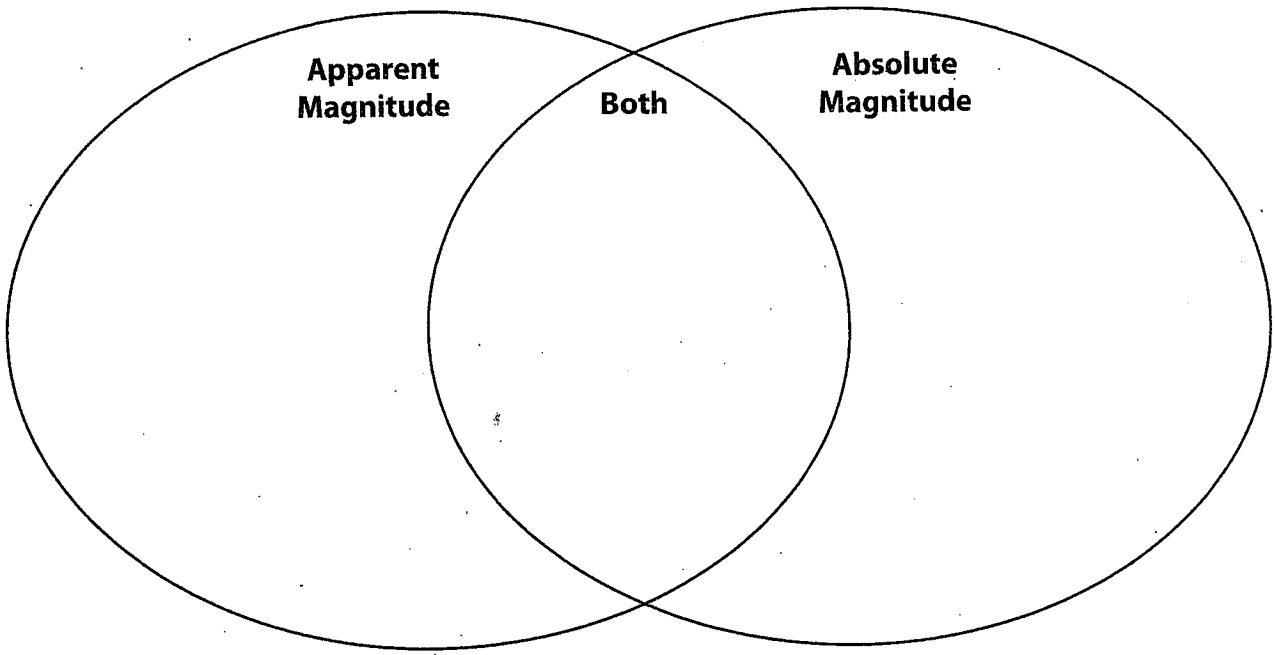
Key Concept Builder LESSON 1

The View from Earth

Key Concept How do scientists measure the distance and the brightness of objects in the sky?

Directions: *Decide whether each statement refers to apparent magnitude, absolute magnitude, or both. Complete the Venn diagram by writing the number of each statement in the correct section. Each statement is used only once.*



1. Luminosity is the true brightness of an object. It is the amount of energy a body radiates per unit of time.
2. Astronomers can measure how bright stars are.
3. The Sun is the brightest object in the sky.
4. depends on a star's temperature and size, not its distance from Earth
5. does not describe a star's actual brightness
6. The brightness of a star is described using a scale with positive and negative numbers.
7. On a star magnitude scale, stars with higher numbers are less bright.
8. can be calculated from a star's distance and apparent magnitude
9. depends on a star's distance from Earth
10. originally described by the Greek astronomer Hipparchus
11. The lower a star's absolute magnitude is, the higher its luminosity will be.
12. brightness as seen by an observer on Earth

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Lesson Quiz A

LESSON 1

The View from Earth

Matching

Directions: *On the line before each definition, write the letter of the term that matches it correctly. Each term is used only once.*

_____ **1.** the true brightness of an object in space

_____ **2.** the brightness of an object as seen from Earth

_____ **3.** divides light into different wavelengths

_____ **4.** average distance between Earth and the Sun

_____ **5.** the distance light travels in one year

A. apparent magnitude
B. astronomical unit
C. light-year
D. luminosity
E. spectroscope

Multiple Choice

Directions: *On the line before each question or statement, write the letter of the correct answer.*

_____ **6.** What do astronomers use to divide the sky into regions?
A. star spectra
B. constellations
C. astronomical units

_____ **7.** Star light provides information about the star's
A. age.
B. speed.
C. temperature.

_____ **8.** What would astronomers use to measure the distance between the Sun and the star Proxima Centauri?
A. light-years
B. astronomical units
C. apparent magnitudes

_____ **9.** A star's luminosity does **NOT** depend on the star's
A. size.
B. temperature.
C. apparent magnitude.

_____ **10.** Astronomers measure how far an object is from Earth by using angles created by
A. spectra.
B. parallax.
C. astronomical units.