

1. A star of apparent magnitude +5 appears \_\_\_\_\_ than a star of apparent magnitude +3.

- a. farther away
  - b. fainter
  - c. brighter
  - d. either brighter or fainter, depending on the distance to the stars
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2. What is a star's luminosity?

- a. total energy emitted by the star into all space per second, measured in watts
  - b. apparent magnitude the star would have if it were located exactly 10 ly from Earth
  - c. apparent magnitude the star would have if it were located exactly 10 pc from Earth
  - d. amount of energy received per second on  $1 \text{ m}^2$  of a planet's surface exactly 1 AU from the star
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3. The Hertzsprung-Russell diagram is a plot of

- a. absolute magnitude (or intrinsic brightness) against temperature of a group of stars.
  - b. apparent brightness against distance for stars near the Sun.
  - c. luminosity against mass of a group of stars.
  - d. apparent brightness against intrinsic brightness of a group of stars.
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4. As you move upward and to the right on the H-R diagram, stars become

- a. cooler and dimmer.
  - b. hotter and brighter.
  - c. hotter and dimmer.
  - d. cooler and brighter.
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5. What is a white dwarf star?

- a. a star of about the same size (diameter) as Earth
  - b. a star that is significantly smaller than a giant or supergiant star
  - c. main-sequence star with a surface temperature near 12,000 K
  - d. large, planetary object, such as Jupiter
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6. A red supergiant star is found to have a surface temperature of 2500 K and a luminosity 100,000 times that of the Sun. Use the Hertzsprung-Russell diagram in Figure 11-8 of *Discovering the Universe*, 10th ed., to determine its approximate radius compared with that of the Sun.
- a. about 1000 times larger
  - b. almost the same
  - c. about 100 times larger
  - d. about 10 times larger
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7. How do astronomers measure the masses of stars?

- a. by measuring the star's brightness, temperature, and distance
  - b. by observing the motion of two stars in a binary star system
  - c. by observing the star's brightness at different wavelengths (colors)
  - d. by measuring the star's brightness and obtaining its radius using the H-R diagram
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8. Stellar parallax appears because

- a. stars move in space.
  - b. stars have finite size (i.e., they are not really just points of light).
  - c. Earth moves in space.
  - d. Earth rotates about its own axis.
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