

1. How far away is the nearest star beyond the Sun, in parsecs?

- a. between 1 and 2 pc
  - b. about 4 pc
  - c. between 1/2 and 1 pc
  - d. about 12 pc
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2. Suppose that two identical stars (they have the same total light output) are located so that star A is at a distance of 5 pc, and star B is at a distance of 25 pc from Earth. How will star B appear, compared with star A?

- a. Star B will be 1/20 as bright as star A.
  - b. Star B will be 1/25 as bright as star A.
  - c. Star B will be 1/2 as bright as star A.
  - d. Star B will be 1/5 as bright as star A.
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3. The Pleiades cluster consists of a number of bright stars wrapped in a cloud of gas and dust that appears blue. This cluster is an example of

- a. a reflection nebula.
  - b. a dark nebula.
  - c. a giant molecular cloud.
  - d. a stellar “nursery.”
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4. New stars are formed from

- a. hot supernova remnants.
  - b. activity around black holes in the centers of galaxies.
  - c. pure energy in free space.
  - d. huge, cool dust and gas clouds.
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5. The stars that last longest are the stars

- a. with the largest mass, that is, the largest amount of fuel.
  - b. with the largest luminosity and highest temperature since they take the longest to cool down to invisibility.
  - c. with the smallest mass.
  - d. of intermediate mass; small-mass stars have little fuel and burn out quickly, while very massive stars burn their fuel very rapidly.
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6. What makes a red giant star so large?

- a. The star has many times more mass than the Sun.
  - b. Red giants are rapid rotators, and centrifugal force pushes the surface of the star outward.
  - c. The helium-rich core has expanded, pushing the outer layers of the star outward.
  - d. The hydrogen-burning shell is heating the envelope and making it expand.
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7. What is the most important use of Cepheid variables for astronomers?

- a. The distance to a Cepheid variable can be found very easily.
  - b. The diameter of a Cepheid variable can be found very easily.
  - c. The characteristics of the pulsation of a Cepheid variable can be used to investigate conditions in the core of the star.
  - d. The metal content of a Cepheid variable can be found very easily.
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8. The age of a cluster of stars can be judged by the

- a. amount of radioactive elements detected on the surfaces of its stars.
  - b. number of novae per year occurring within the cluster.
  - c. turnoff point on the main sequence of its Hertzsprung-Russell diagram.
  - d. total number of stars within the cluster.
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