



Stars and Brightness

Name: _____

Date: _____

Grade: Grade 5

Part A: Multiple Choice

Circle the best answer for each question.

1. Star A and Star B give off the same actual light, but Star B is twice as far from Earth. How does Star B appear?

- A) Dimmer than Star A from Earth's view
- B) Exactly as bright as Star A always
- C) Brighter than Star A from Earth's view
- D) Completely invisible at any distance

2. An observer near the North Pole is most likely to see which constellation high overhead all year?

- A) The Southern Cross close to the southern horizon
- B) Ursa Major and Polaris circling near the zenith
- C) Constellations only visible south of the equator
- D) No constellations because the sky stays empty

3. If a star moves three times farther away while emitting the same light, its apparent brightness becomes about how much of the original?

- A) About three times the original brightness
- B) Exactly equal to the original brightness
- C) About one-ninth of the original brightness
- D) Completely zero from any location

4. An observer at the equator looks straight up on a clear night. What is most likely true of their view?

- A) They cannot see any stars at the equator
- B) Polaris appears directly overhead at all times
- C) Only the Southern Cross is ever visible
- D) They can see parts of both northern and southern skies through the year

Part B: Fill in the Blank

Write the correct answer on each line.

1. The actual amount of light a star gives off is called its _____ brightness, not its apparent brightness.
2. When a star is very far away, it usually looks _____ than a closer star with the same true brightness.
3. An observer at high northern latitudes will always see _____ near the celestial north pole.
4. Observers in the Southern Hemisphere can never see Polaris because it stays below their _____.
5. If a star is moved twice as far from Earth, its apparent brightness becomes about one-_____ of what it was.

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Part B: Fill in the Blank

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1. The actual amount of light a star gives off is called its true brightness, not its apparent brightness.
2. When a star is very far away, it usually looks dimmer than a closer star with the same true brightness.
3. An observer at high northern latitudes will always see Polaris near the celestial north pole.
4. Observers in the Southern Hemisphere can never see Polaris because it stays below their horizon.
5. If a star is moved twice as far from Earth, its apparent brightness becomes about one- fourth of what it was.