

1. Earth would *not* have seasons if

- a. its equatorial plane were perpendicular to its orbital plane.
 - b. its axis of rotation were perpendicular to its equatorial plane.
 - c. the observer's vertical axis (zenith) were perpendicular to Earth's orbital plane.
 - d. its axis of rotation were perpendicular to its orbital plane.
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2. The phase of the Moon at the time of solar eclipse

- a. is full.
 - b. can be any phase: new, quarter, or full.
 - c. is new.
 - d. is third quarter.
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3. Ptolemy's model for the solar system was

- a. Earth-centered, with the Sun, the Moon, and the planets moving in ellipses in the sky.
 - b. Sun-centered, with elliptical planetary orbits.
 - c. Sun-centered, with the planets moving in circles around it.
 - d. Earth-centered, with planetary orbits composed of deferents and epicycles.
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4. The axis around which Earth rotates

- a. always points toward Polaris, the North Star.
 - b. precesses (wobbles) and takes about a century to go around once.
 - c. precesses and takes many thousands of years to go around once.
 - d. always tilts slightly toward the direction of the Sun.
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