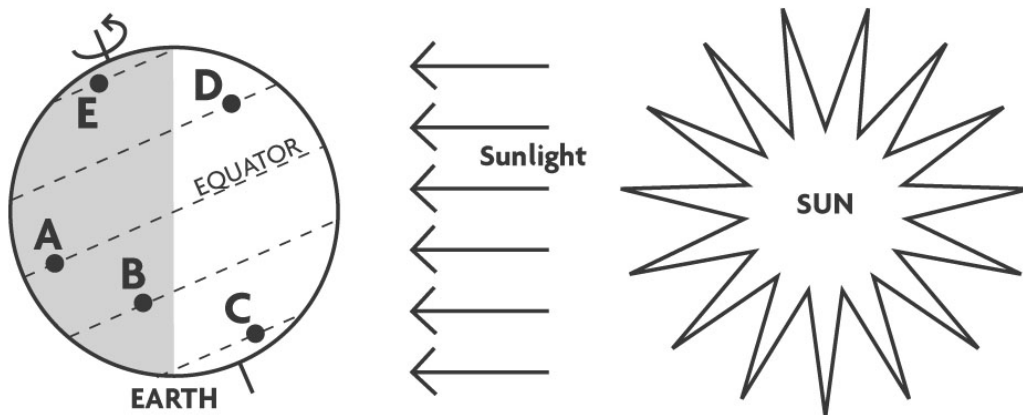


Astronomy Ranking Task: The Seasons

Exercise #4

Description: In the figure below parallel beams of sunlight illuminate Earth. Notice that the Earth's rotation axis is slightly tilted. As the Earth spins, locations A through E spend part of the 24 hour day in sunlight, and part of the day in darkness (as indicated by the shaded region).



A. Ranking Instructions: Rank the time it takes (from longest to shortest) each location (A – E) to complete one full rotation.

Ranking Order: Longest time 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Shortest time

Or, the time it takes each location to make one full rotation is the same. _____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

B. Ranking Instructions: Rank the time (from longest to shortest) that each location spends in daylight during each 24 hour period.

Ranking Order: Longest time 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Shortest time.

Or, the time each location spends in daylight is the same. _____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

C. Ranking Instructions: Imagine that you placed identical glasses of water at each location (A - E) and the water was warmed by the Sun during one full 24 hour rotation. Rank the temperature (from coolest to hottest) of the glasses of water at each location (A – E) at the end of that time period.

Ranking Order: Coolest 1 _____ 2 _____ 3 _____ 4 _____ 5_____ Hottest

Or, the temperature of each glass of water is the same. _____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:
