Astronomy Ranking Task:
Apparent and Absolute Magnitude

Exercise #4

Description: The table below provides an incomplete list of the magnitude and distance (from Earth) for five stars (A - E).

<table>
<thead>
<tr>
<th>Star Name</th>
<th>Apparent Magnitude</th>
<th>Absolute Magnitude</th>
<th>Distance from Earth (parsecs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td></td>
<td>10,000</td>
</tr>
<tr>
<td>E</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

A. Ranking Instructions: Rank the brightness (from greatest to least) of each star (A – E) as it would appear in the night sky. Note that it is not necessary, but may be helpful, to complete the table before making your rankings.

Ranking Order: Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Least

Or, the brightness of each star would appear the same from Earth ___ (indicate with check mark).

Carefully explain your reasoning for ranking this way:
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

B. Ranking Instructions: Rank the apparent magnitude number (from greatest to least) of each star (A – E).

Ranking Order: Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Least

Or, the apparent magnitude number of each star is the same. ___ (indicate with check mark).

Carefully explain your reasoning for ranking this way:
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
C. **Ranking Instructions:** Rank the actual brightness or luminosity (from greatest to least) of each star (A – E).

**Ranking Order:** Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Least

Or, the actual brightness of each star is the same. _____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

D. **Ranking Instructions:** Rank the absolute magnitude number (from greatest to least) of each star (A – E).

**Ranking Order:** Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Least

Or, the absolute magnitude number of each star would be the same. _____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

E. **Ranking Instructions:** Rank the distance (from farthest to closest) to each star (A – E) from Earth.

**Ranking Order:** Farthest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ Closest

Or, the distance to each star from Earth would be the same. _____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________