Astronomy Ranking Task: Gravity

Exercise #6

Description: The table below shows the masses and distances (expressed in arbitrary units) between four different pairs of stars (Cases A – D).

<table>
<thead>
<tr>
<th>Case</th>
<th>Mass of star #1</th>
<th>Distance between star #1 and star #2</th>
<th>Mass of star #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>C</td>
<td>8</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Ranking Instructions: Rank (from greatest to least) the strength of the gravitational force exerted between the pairs of stars in cases A - D.

Ranking Order: Greatest 1 ______ 2 _______ 3 _______ 4 _______ Least

Or, the strength of the gravitational force exerted between each pair of stars is the same. ________ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

___________________________________________________