

# 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).

Case	Mass of star #1	Distance between star #1 and star #2	Mass of star #2
A	4	2	2
B	2	2	8
C	8	4	4
D	1	3	5

$F \propto \frac{m_1 m_2}{r^2}$

$F = \frac{G m_1 m_2}{r^2}$

2  
4  
2  
5/9

**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 B 2 A 3 C 4 D Least

SAME

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:

*Force proportionality is calculated.*

---



---



---