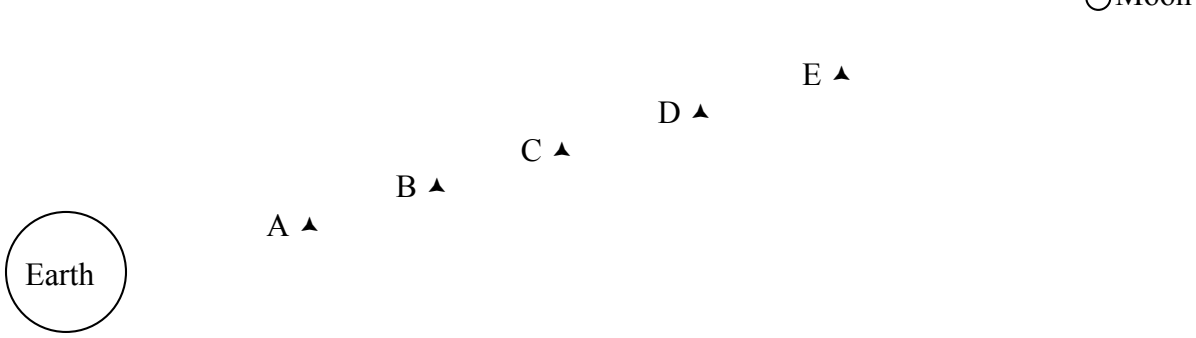
Astronomy Ranking Task:
Gravity

Exercise #3

Description: In the picture below, the Earth-Moon system is shown (not to scale) along with five possible positions (A - E) for a spacecraft traveling from Earth to the Moon. Note that position C is exactly half-way between Earth and the Moon..



A. Ranking Instructions: Rank (from greatest to least) the strength of the gravitational force at positions A - E exerted by the Moon on the spacecraft.

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

Or, the gravitational force exerted at each position is the same. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

_____
_____
_____
_____

B. Ranking Instructions: Rank (from greatest to least) the strength of the net (or total) gravitational forces at positions A - E exerted by both the Earth and the Moon on the spacecraft.

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

Or, the gravitational force exerted at each position is the same. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

_____
_____
_____
_____