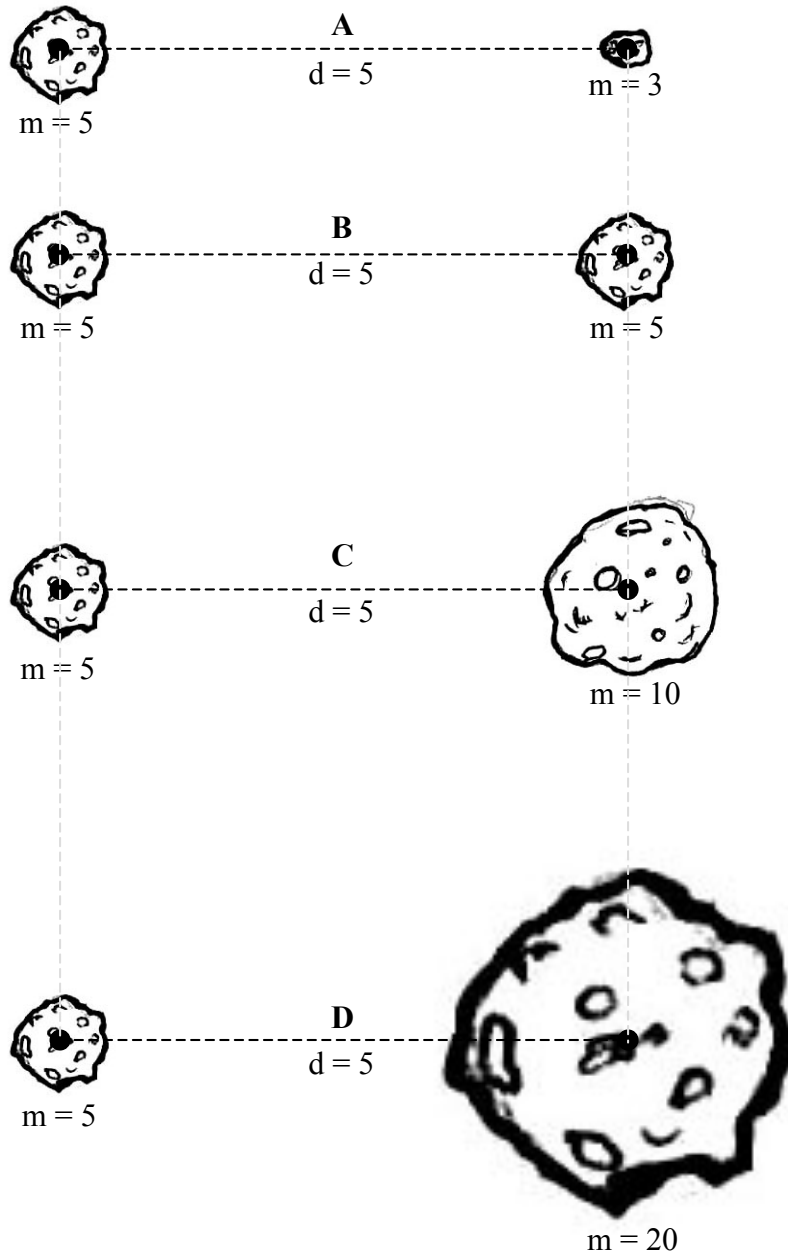


# Astronomy Ranking Task: Gravity

## Exercise #4

**Description:** The figures below (A – D) each show two rocky asteroids with masses ( $m$ ), expressed in arbitrary units, separated by a distance ( $d$ ), also expressed in arbitrary units.



**A. Ranking Instructions:** Rank (from greatest to least) the strength of the gravitational force exerted on the asteroid located on the left side of each pair.

**Ranking Order:** Greatest 1 \_\_\_\_ 2 \_\_\_\_ 3 \_\_\_\_ 4 \_\_\_\_ Least

Or, the strength of the gravitational force exerted in each case is the same. \_\_\_\_\_  
(indicate with a check mark)

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

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**B. Ranking Instructions:** Using Newton's Second Law, rank the acceleration (from greatest to least) that the asteroids located on the left side of each pair would experience due to the gravitational force exerted on it.

**Ranking Order:** Greatest 1 \_\_\_\_ 2 \_\_\_\_ 3 \_\_\_\_ 4 \_\_\_\_ Least

Or, the accelerations for each asteroid is the same. \_\_\_\_\_ (indicate with a check mark)

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

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