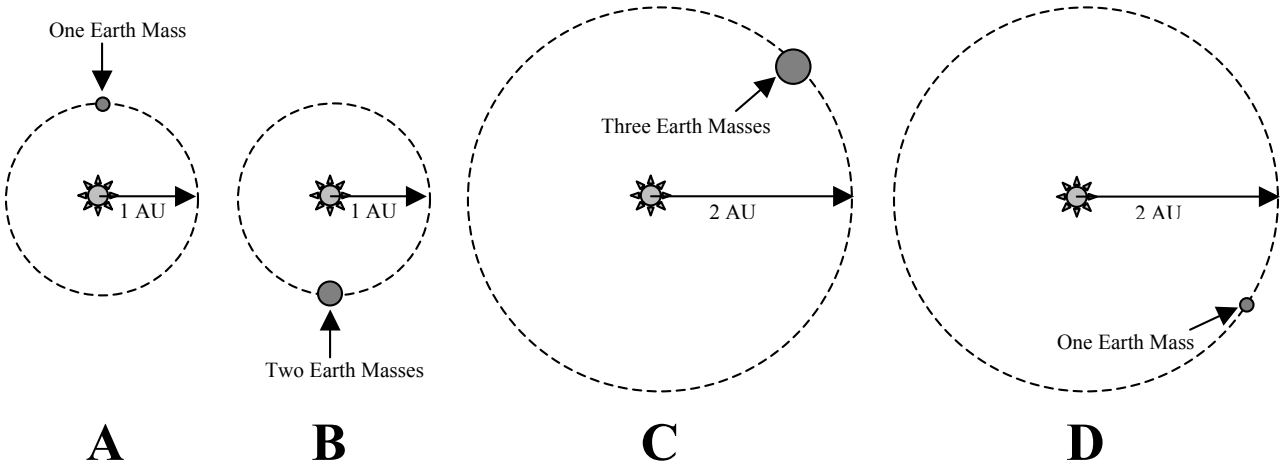
Astronomy Ranking Task:
Kepler's Laws – Orbital Motion

Exercise #5

Description: The figure below shows four identical one solar mass stars, and four planets (A – D) of different masses in circular orbits of various sizes. In each case the mass of the planet is given in Earth masses and the orbital distance is given in Astronomical Units (AU). Note that the sizes of the stars and planets, and the orbital distances have not been drawn to scale.



Ranking Instructions: Rank the orbital periods (from longest to shortest) of the planets (A – D).

Ranking Order: Longest 1 ___ 2 ____ 3 ____ 4 ____ Shortest

Or, the orbital periods of the planets would all be the same. _____ (indicate with check mark).

Carefully explain your reasoning for ranking this way:

_____
_____
_____
_____