

Astronomy Ranking Task: Inverse Square Law

Exercise #4

Description: Below is an incomplete table showing the orbital distances of six planets (labeled A through F) from their sun and the intensity of sunlight received on each planet. The planets are identical in size.

Planet	Orbital Distance	Intensity of Light Received
A		1
B		1/9
C	4	
D	1	
E		1/4
F	3	

A. Ranking instructions: Rank the distances of the planets from the sun.

Ranking Order: Closest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ Farthest

Or, the planets are all the same distance from the sun. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

B. Ranking instructions: Rank how bright the sunlight would be to an observer on each planet.

Ranking Order: Faintest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ Brightest

Or, observers on each planet would see the sunlight at the same brightness. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

C. Ranking instructions: Rank the actual luminosity of the sun, as measured by the observer on each planet.

Ranking Order: Most 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ Least

Or, the observers all measure the same actual luminosity of the sun. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:
