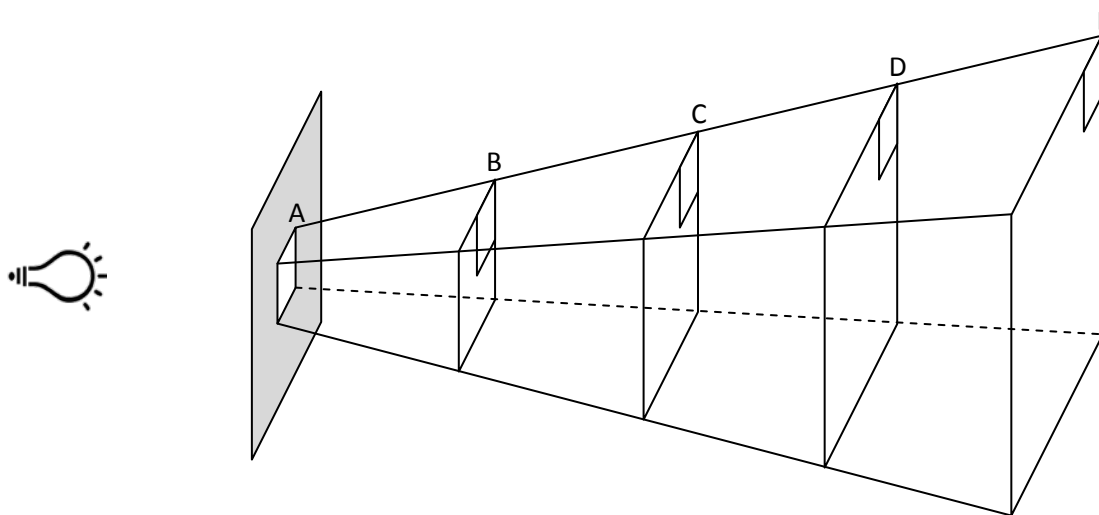


Astronomy Ranking Task: Inverse Square Law

Exercise #2

Description: The diagram below illustrates the path of light as it shines through a hole (area A) cut in a mask (shaded). The surface areas (unshaded) are evenly spaced from the bulb. The tiny “sub-areas” (labeled B through E) are the same surface area as A; A is its own “sub-area”.



A. Ranking instructions: Rank the distances from the bulb to each of the sub-areas.

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

Or, the distance from the bulb to each sub-area is the same. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

B. Ranking instructions: Rank the amounts of surface area of each sub-area.

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

Or, the surface area of each sub-area is the same. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

C. Ranking instructions: Rank the amounts of light passing through each sub-area.

Ranking Order: Least 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ Most

Or, the same amount of light passes through each sub-area. ____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

D. Ranking instructions: Rank how bright each sub-area would appear to an observer standing on the side with the bulb.

Ranking Order: Brightest 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ Faintest

Or, all the sub-areas would appear the same brightness. ____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:
