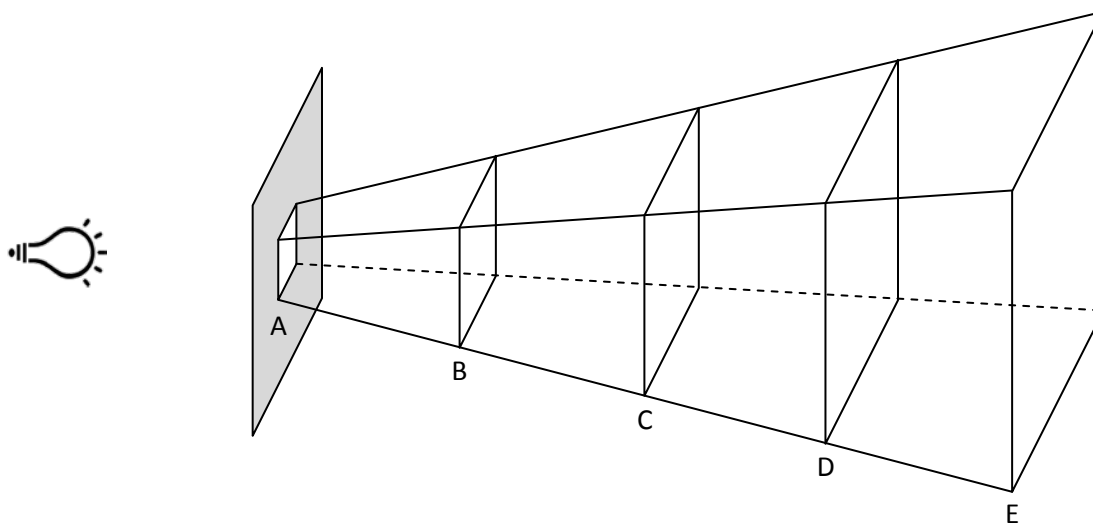


Astronomy Ranking Task: Inverse Square Law

Exercise #1

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) marked A through E are evenly spaced from the bulb.



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

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

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

Carefully explain your reasoning for ranking this way:

B. Ranking instructions: Rank the total amount of surface area that the light passes through at each letter.

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

Or, the light passes through the same amount of surface area at each letter. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

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

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

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

Carefully explain your reasoning for ranking this way:

D. Ranking instructions: Rank how bright each surface 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 surface areas would appear the same brightness. ____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:
