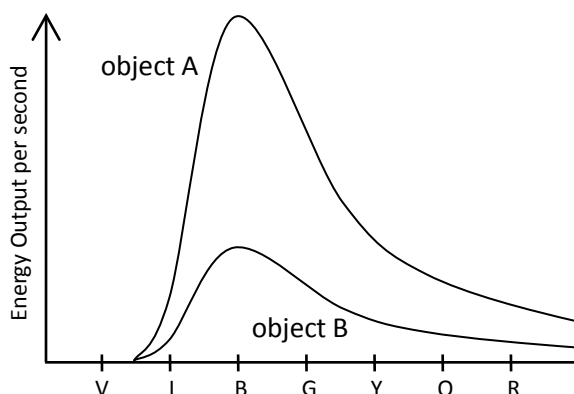


Astronomy Ranking Task: Blackbody Radiation

Exercise #3

Description: The graph below shows the amounts of energy given off by objects A and B each second versus the wavelengths of light in the visible spectrum. The colors of the visible spectrum are labeled with the letters *ROY G BIV*.



A. Ranking instructions: Rank the energy output per second of the colors in the visible spectrum given off by object A.

Ranking Order: Most 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ Least

Or, object A gives off the same amount of each color in the visible spectrum per second. _____
(indicate with a check mark)

Carefully explain your reasoning for ranking this way:

B. Ranking instructions: Rank the energy output per second of the colors in the visible spectrum given off by object B.

Ranking Order: Most 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ Least

Or, object B gives off the same amount of each color in the visible spectrum per second. _____
(indicate with a check mark)

Carefully explain your reasoning for ranking this way:

C. Which object gives off the most red light per second? Explain.

D. Which object gives off the most blue light per second? Explain.

E. Which object gives off the most violet light per second? Explain.

F. What color does object A appear? Explain.

G. What color does object B appear? Explain.

H. Ranking instructions: Rank the wavelengths of peak output of objects A and B.

Ranking Order: Longer 1 _____ 2 _____ Shorter

Or, objects A and B have the same wavelength of peak output. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

I. Ranking instructions: Rank the temperatures of objects A and B.

Ranking Order: Hotter 1 _____ 2 _____ Cooler

Or, objects A and B are the same temperature. _____ (indicate with a check mark)

Or, there is not enough information to determine the temperatures of objects A and B. _____
(indicate with a check mark)

Carefully explain your reasoning for ranking this way:

J. Ranking instructions: Rank the total energy output by objects A and B.

Ranking Order: Least 1 _____ 2 _____ Most

Or, objects A and B have the same total energy output. _____ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

K. Ranking instructions: Rank the surface areas of objects A and B.

Ranking Order: Smaller 1 _____ 2 _____ Larger

Or, objects A and B have the same surface area. _____ (indicate with a check mark)

Or, there is not enough information to determine the surface areas of objects A and B. _____
(indicate with a check mark)

Carefully explain your reasoning for ranking this way:
