Name: _____-

Planck Function In-Class Activity

Planck's Law defines **Spectral Radiance** as

$$B(\lambda, T) = \frac{8\pi hc^2}{\lambda^5} \frac{1}{e^{\frac{hc}{\lambda k_B T}} - 1}$$

Let's build some intuition about this very important function using dimensional analysis.

Question 1: What units should an exponential have?

Question 2: Given your answer to Question 1, what units should k_B, the Boltzmann constant, have?

Question 3: What units, therefore, does Spectral Radiance (B) have?

Question 4: If you pull units of Energy out of those for Spectral Radiance, what is left over?

Question 5: Can you break the remaining units down in the form "Spectral radiance has units of Energy per unit <unit type X> per unit <unit type Y>…"?