

1. A student found three types of incandescent light bulbs in a grocery store. One marked as 40W red light bulb, another marked as 40W blue bulb and the third one marked as a 60W red bulb. These readings indicate the energy consumed by the filaments every second. Assume all the energy consumed by the filaments are converted into light (which is of course not true, but let's use it as an approximation at this moment.)
 - (a) Which light bulb consumes more energy in 10 seconds? How much energy does it consume?

 - (b) If the filaments only give out the photons at indicated color (again, an even worse assumption away from the truth), please rank the three bulbs by the number of photons emitted every second? And carefully explain your reasons.

 - (c) If the sizes of the three light bulbs are the same, which light bulb has the largest brightness at its surface?