Favorite Metaphor

Name

Show your work, and circle your answers and use sig figs to receive full credit.

When you have finished this, go to the website and check your answers. If you got a problem wrong, cross it off on the front, and do it correctly on the back. 1-2: A solar water heater has an albedo of 0.112. It measures 1.30 m by 2.15 m, and on a particular day, the intensity of the sun is 1150 W m⁻².

1. What is the intensity of the reflected light, and the absorbed light?

2. What is the maximum energy it could absorb in an hour?

3. A particular star has a peak black body wavelength of 517 nm. What is its temperature in Kelvins?

4. A power adapter has an outside area of 0.00540 m^2 , an emissivity of 0.720, and is dissipating 45.0 mW of heat by black body radiation to a room that is at a temperature of 20.0 °C. What is the temperature of the power adapter?

5. A planet has an upper atmosphere with an albedo of 0.170. Radiation from the star it orbits strikes the side facing the star with an intensity of 1370 W m⁻². If there is no greenhouse effect, what would be the equilibrium temperature of the planet with space?