Homework Set No. 2, Physics 836

Deadline – Wednesday, April 12, 2006

1. (10 pts) Jackson Problem 11.24 (you do not need to calculate the numbers, formal expressions will do).

2. (10 pts) Jackson Problem 11.25 (a), (b).

3. (10 pts) An isotropic point source of light is moving with constant velocity v. In the rest frame of the source, the angular distribution of the emitted photons is isotropic

$$\frac{dN}{d\Omega'} = N_0, \tag{1}$$

where Ω' is an element of the solid angle and N_0 is some constant. Find the angular distribution of photons in the laboratory frame (in which the source is moving with constant velocity v).