

HOMEWORK #3

1. Problem 2.9 of the text.
2. Problem 3.8 of the text.
3. Problem 9.2a of the text.
4. Problem 9.3a of the text.
5. Problem 9.5 of the text.
6. Problem 9.6 of the text.
7. Problem 9.7 of the text.
8. Consider the spherical shell below shown in cross-section. Assume this is a shell of gas that has constant density ρ and constant opacity κ that is not a function of wavelength. Derive the optical depth $\tau(p)$ along a ray through the shell as a function of cylindrical radius p . The observer is located at $+\infty$ along the z axis. The inner and outer radii of the shell are R_1 and R_2 , respectively.