Problem 1.

For a total cross section given by the equation

$$\sigma_t(E) = 5 + 0.5E - 0.1E^2, E \texttt{ in } \text{keV}$$

find the total group cross section for a group that spans from 2 keV to 3 keV.

Solution

Problem 2.

Find the isotropic elastic scatter cross section for Carbon-12 (A=12) from an energy group that spans from 0.6 keV to 0.7 keV to a group that spans from 0.4 keV to 0.5 keV. Assume the flux spectrum is $1/E$ and that the scattering cross section is a constant 5 b.

Solution

Problem 3.

For the same physical situation as in the previous problem, find the within-group scattering cross sectios for the energy group that spans from 0.6 keV to 0.7 keV.

Solution