PS 50: Problem 4.30

(a) The mean demon energy is given by

$$\langle E_d \rangle = \frac{\displaystyle\int_0^\infty E_d e^{-\beta E_d} \, \mathrm{d}E_d}{\displaystyle\int_0^\infty e^{-\beta E_d} \, \mathrm{d}E_d} \qquad (1)$$