Homework # 9

Problems: 8.4, 8.8, 8.9 (6 points), 8.14 (6 points)

Answers and useful information:

8.4

Your can get all masses that your need from the following web site:

\[ _{239}^{\beta} \tau \approx 7.3 \times 10^{15} \text{ years} \]

\[ _{212}^{\beta} \tau \approx 2.6 \times 10^{-4} \text{ s} \]

Note that results are extremely sensitive to the values of nuclear masses.

8.8 (a)

\[ \chi_2 = \sqrt{\frac{(2n+1) \hbar}{nmw}} \]

(b) \[ \frac{1}{a} = 0.1 \chi_2 \]

(c) \[ n_{\text{min}} = 125 \]

8.9 Follow the derivation of connection formula for upward-sloping turning point on pages 326-330 of the textbook.