September 24, 1999

# PHY 337– Problem Set # 11

Continue reading Chapter 12 of **Marion**.

1. A particle of mass $m$ moves in one dimension near the equilibrium point of the potential:

$$V(r) = \frac{A}{r^8} - \frac{B}{r},$$

where $A$ and $B$ are positive constants and $r > 0$.

(a) Find the equilibrium displacement $r_0$.

(b) Find the frequency of small oscillations about the equilibrium displacement.

Express your answers in terms of $A$, $B$, and $m$.