Homework 2

Due in class Monday, Feb. 7

From the text: 2-14, 2-20, 3-13, 3-20

1. Consider a central potential of the form $V(r) = -k/r^2$, $k > 0$.

(a) Sketch the effective potential for angular momentum ℓ such that $\ell^2/2m > k$ and $\ell^2/2m < k$.
(b) Identify the possible kinds of orbits for each case in (a).
(c) Explicitly calculate the orbits you identified in (b). Plot them and discuss them physically.