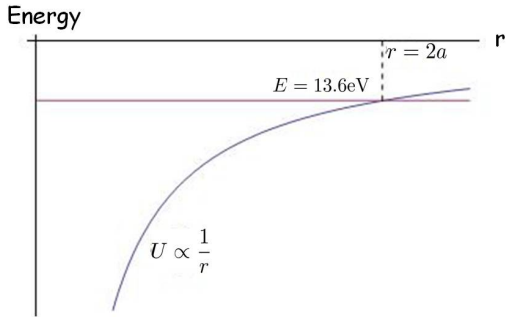
PC2232 – Tutorial 10 Solutions

2. (a) The graph looks something like:



(c) Probability = 0.238.

3. (a) 3 different photon wavelengths

Initial m_l	Final m_l
1	0
0	0
-1	0

(b) $\Delta\lambda = \pm 0.07\text{nm}$

6. (b) This state is different in terms of angular dependence of its probability density.
(c) Because this state is proportional to $r \sin\theta \sin\phi$
(d) $\psi_{2,1,+1}(r,\theta,\phi) - \psi_{2,1,-1}(r,\theta,\phi)$