

11-4 HW Soln)

$$E_{n_x, n_y, n_z} = \left( \frac{n_x^2}{L_x^2} + \frac{n_y^2}{L_y^2} + \frac{n_z^2}{L_z^2} \right) \frac{h^2}{8m} \rightarrow \left( n_x^2 + n_y^2 + \frac{n_z^2}{4} \right) \frac{h^2}{8mL^2} .$$

I used Excel and crunched them:

| Energy/ $(\frac{h^2}{8mL^2})$ | State ( $n_x, n_y, n_z$ ) |
|-------------------------------|---------------------------|
| 2.25                          | 111                       |
| 3                             | 112                       |
| 4.25                          | 113                       |
| 5.25                          | 211, 121                  |
| 6                             | 122, 212, 114             |
| 7.25                          | 123, 213                  |
| 8.25                          | 221, 115                  |
| 9                             | 124, 214, 222             |
| 10.25                         | 311, 131, 223             |
| 11                            | 116, 132, 312             |
| 11.25                         | 125, 215                  |
| 14                            | 232, 322                  |
| 12                            | 224                       |
| 12.25                         | 133, 313                  |
| 13.25                         | 321, 231, 117             |